Former Massachusetts CIO Peter Quinn says his job got too political for his liking. PAGE 14

Brilliant techies who won't dirty their hands in maintenance: What's an IT manager to do? Paul Glen answers. PAGE 46

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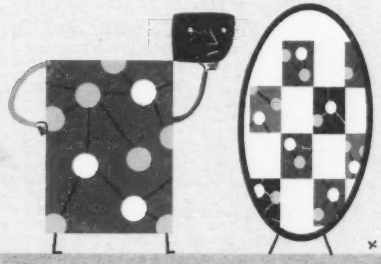

## Morphing the Mainframe

**Windows and Unix server farms are taking on mainframelike qualities, while mainframes themselves are evolving to act more like distributed systems.**

**Robert L. Mitchell explains how the future of big iron hangs in the balance.**

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JAMES YANG


NEWSPAPER

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# FTC Makes a Point With ChoicePoint Penalties

## Hits firm with largest civil fine ever in data breach case

BY JAIKUMAR VIJAYAN

The Federal Trade Commission last week imposed a $10 million fine — the largest civil penalty ever levied by the agency — on ChoicePoint Inc. for the highly publicized security breach that the data aggregator disclosed last year.

The settlement, which also includes a $5 million payment by ChoicePoint to help victims of the data theft, was the first in which the FTC has fined a company in connection with a security breach.

Corporate security managers and several lawyers who specialize in security-related legal matters are viewing the stiff fine as an indication of the increasingly tough stance that the government is taking against businesses that fail to adequately protect sensitive customer information.

And it isn't just companies that suffer actual data breaches that need to be concerned, they warned — businesses unable to demonstrate due diligence on their information security practices could also find themselves being targeted by the FTC.

The financial penalties levied against ChoicePoint were "pretty severe" and should send a sobering message to corporate America, said the director of information security at a specialty retail chain based in California.

The security director, who asked not to be identified, said that "$15 million is not a lot of money for ChoicePoint, but it is far larger than any other fine we have seen so far, and people are calling for still-tougher penalties." The FTC's action drives home the point that Congress and federal officials are waking up to data protection issues, he added.

"There has been a definite change in the FTC's handling and analysis of security

*ChoicePoint, page 54*

**INSIDE**

Two more companies disclose large security breaches – each involving the theft of hardware from an employee's car. PAGE 54

State and local government IT managers say there's still a disconnect between them and the DHS on cybersecurity. PAGE 12

## Patent Fight Puts BlackBerry Users on Edge Over Service

### Fears of a shutdown prod IT to look at wireless alternatives

BY MATT HAMBLEN

With many BlackBerry users starting to panic about the possibility that the popular wireless service could be shut down as part of a long-running patent dispute, IT managers are scrambling to arrange backup options — just in case.

The U.S. Supreme Court last week refused to intervene in the legal fight between BlackBerry vendor Research In Motion Ltd. and NTP Inc., shutting down one of RIM's stratagems for avoiding a lower-court injunction that would halt most BlackBerry usage in the U.S. Although the latest development in the patent saga wasn't a big surprise, some IT managers said last week that their end users are growing skittish about the BlackBerry service's future.

"The lawyers in my firm are asking me, 'I'm not going to lose service, am I?' Man, people are wiggin' out," said Frank Gillman, director of technology at Allen Matkins Leck Gamble & Mallory LLP in Los Angeles. About 220 workers at the law firm use

*BlackBerry, page 56*

> **"[RIM is] out of their minds if they don't settle this dispute. They have so much to lose if somebody shuts things down.**
>
> FRANK GILLMAN, DIRECTOR OF TECHNOLOGY, ALLEN MATKINS LECK GAMBLE & MALLORY LLP

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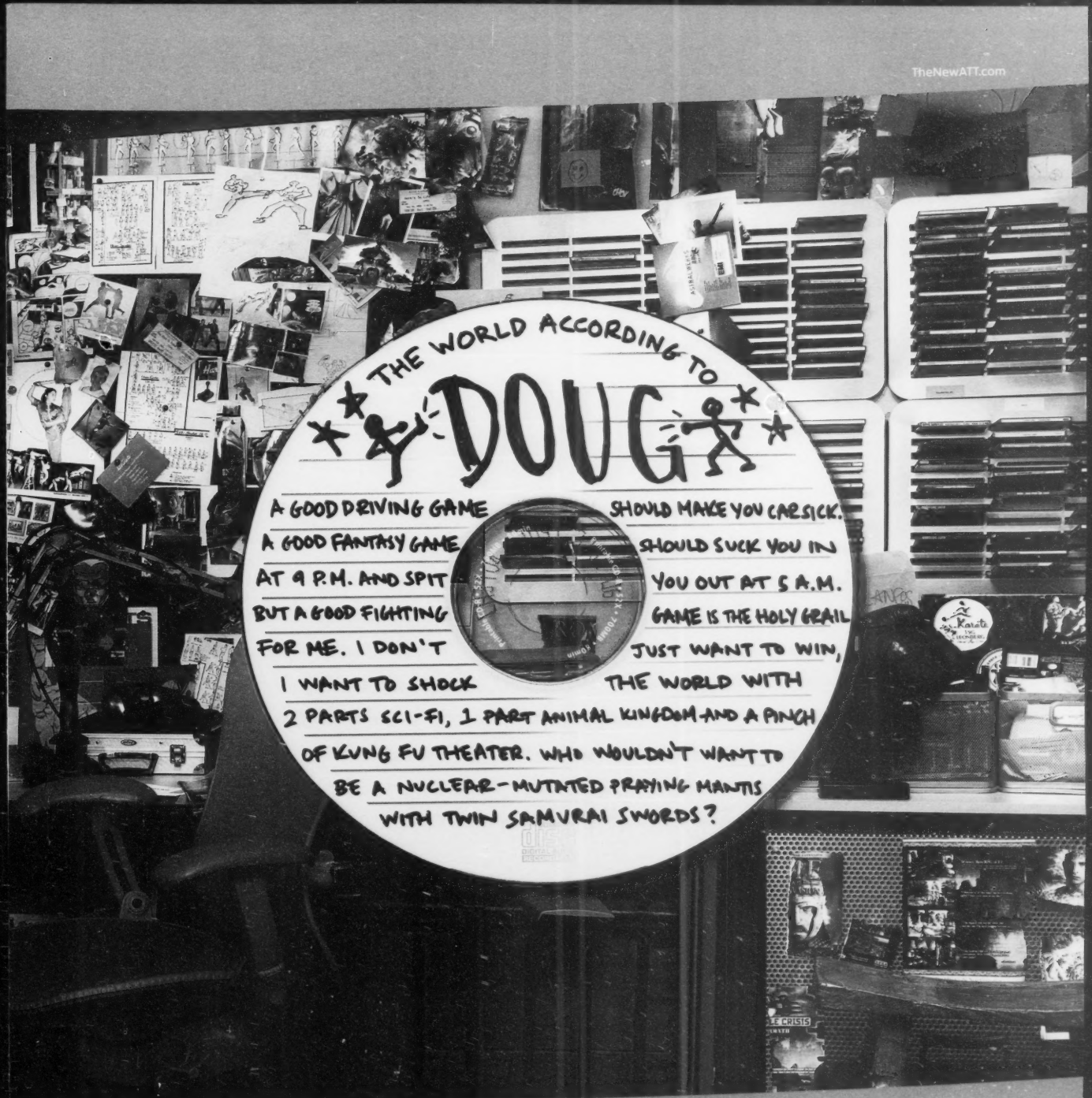
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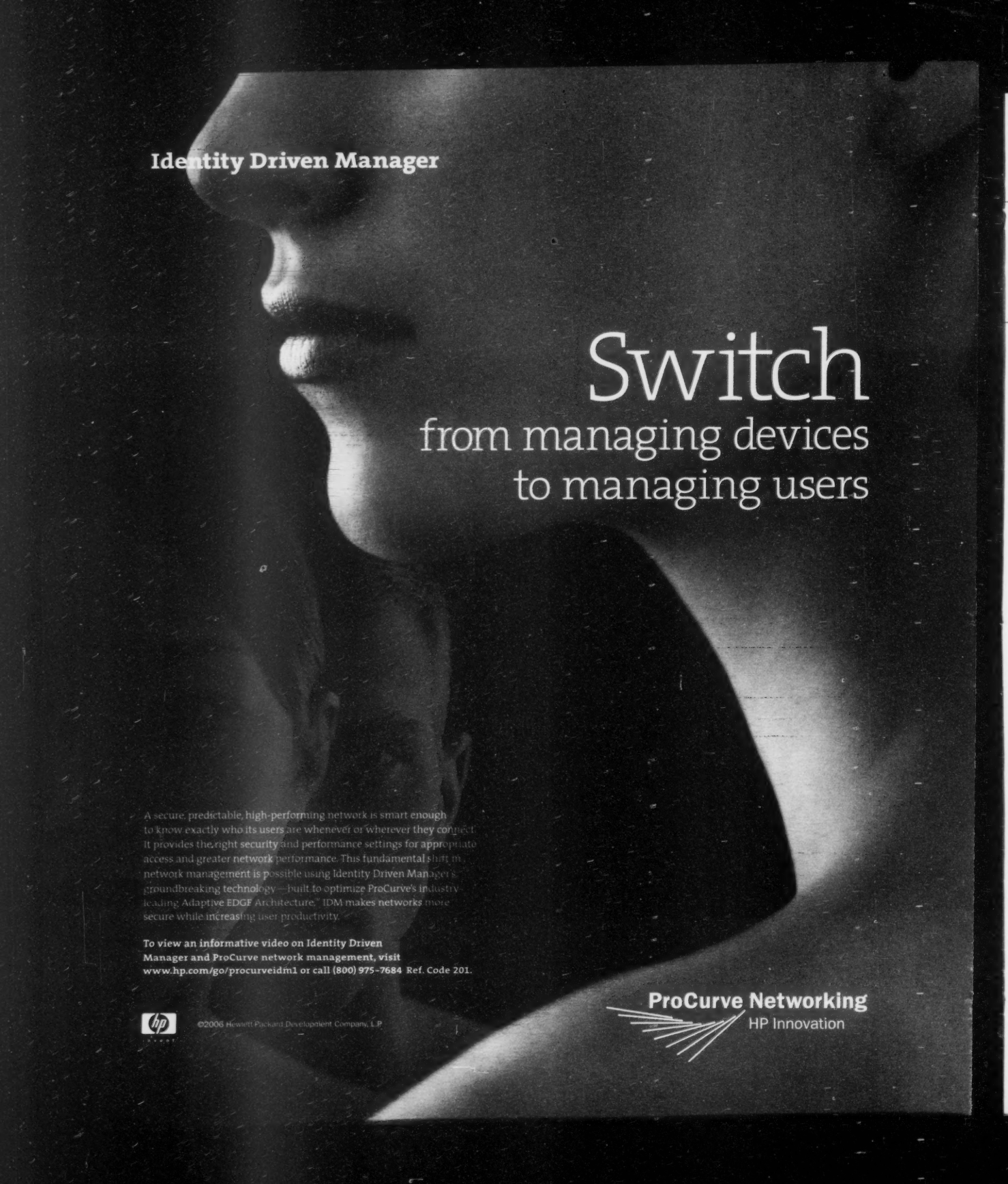
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01.30.06

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**In the Technology section:** These hacker tools cloak themselves in secrecy while allowing malware to wreak havoc on users' machines. Here's how rootkits work their black magic. **Page 36**

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**In the Technology section:** The U.S. lacks state-of-the-art IT resources that would help health care officials respond to an avian flu pandemic. Creating a map of outbreaks requires manual input, for example, and national and regional systems aren't fully integrated. **Page 32**

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## ONLINE

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### Next on Your Agenda: Genetic Privacy

**OPINIONS:** Privacy columnist Jay Cline says the safest bet is for companies to avoid using personal genetic test information until public trust has been earned. And he offers seven principles for eventually earning that trust. **QuickLink a7891**

### Daily Security Check

**BLOGS:** Every weekday, catch up on the latest observations of network security professionals Martin McKeay and Douglas Schweitzer. **QuickLink a7881**

### Since You Asked

**STORAGE:** Enterprise Strategy Group founder Steve Duplessie kicks off his weekly column answering readers' questions. **QuickLink a7920**

### What to Watch Out for With Wi-Fi

**SECURITY:** Wireless technology creates many opportunities for malicious hackers to gain access to private data, says Matthew Gray of Newbury Networks. He examines some of the best-known attacks against wireless LANs. **QuickLink a7901**

### Boycott Google Now

**OPINIONS:** Dan Verton says Google has capitulated to China's demands for censorship, and that action deserves a boycott. **QuickLink a7910**

### Computerworld TechCast

**AUDIO:** This five-minute podcast delivers summaries of key technologies and concepts every week. **QuickLink a7780**

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## AT DEADLINE

### U.K. Proposes Stiffer IT Criminal Penalties

A bill introduced in the House of Commons calls for sharply increasing penalties for computer crimes that are taking a financial toll on U.K. businesses. The Police and Justice Bill would increase the maximum penalty for unauthorized modification of a computer from five to 10 years. Also, those convicted of unauthorized access to a computer would face a prison sentence of up to two years, compared with six months now.

### Intel, Partners Invest $10B in Itanium

Intel Corp. and a group of partners, including Fujitsu Ltd., Hewlett-Packard Co. and Unisys Corp., have pledged to invest $10 billion over five years to help develop and promote products based on the Itanium processor. The money will be spent on research and development, sales and marketing, and support for software vendors' efforts to port products to Itanium.

### Microsoft Revenue For Q2 Falls Short

Microsoft Corp. reported a 9% increase in revenue for its second fiscal quarter, just under the consensus revenue forecast from analysts polled by Thomson Financial.

MICROSOFT BY THE NUMBERS

| | REVENUE | PROFIT |
|---|---|---|
| Q2 '06 | $11.8B | $3.7B |
| Q2 '05 | $10.8B | $3.5B |

### 3Com Names Murray President and CEO

R. Scott Murray has been named president and CEO of 3Com Corp., replacing Bruce Claflin, who is retiring after five years at the helm of the networking vendor. Murray was previously CEO of Modus Media International Inc., a supply chain software developer that was sold in 2004 to CMGI Inc. Murray was also named chairman of 3Com's Chinese joint venture with Huawei Technologies Co.

# IBM's IM Upgrade Will Link To Other Vendor's Software

## Sametime to support communication with AOL, Yahoo and Google systems

BY TODD R. WEISS
ORLANDO

USERS AT Lotusphere 2006 here last week said IBM's decision to link its secure messaging system with instant messaging products from America Online Inc., Yahoo Inc. and Google Inc. could be a boon to their operations.

The new multiprotocol gateway that links the IM offerings of different vendors is part of Version 7.5 of IBM's Sametime tool, which was unveiled here and will ship midyear. The new Sametime IM version also promises improved security and privacy tools.

Daniel Singleton, a corporate programmer/analyst at Assurant Solutions, a division of New York-based specialty insurance company Assurant Inc., said that adding security to public IM clients could go a long way toward increasing IM use among his division's 7,000 Lotus Notes users.

"The key thing is the security," he said. "If the security is there, then I see no reason whatsoever that we wouldn't adopt it. I find it extremely useful. The whole power of something like this is that the more people who are on it, the more effective it becomes."

Management at Assurant Solutions currently sees IM as more of a distraction than a tool, Singleton said. Company policy doesn't allow use of AOL Instant Messenger because of security concerns.

### Customer Connection

Jeff Bentley, a messaging engineer at Charlotte, N.C.-based Wachovia Corp., said the financial institution would find secure multivendor IM systems critical for connecting its brokers to their customers and others. IM use is currently prohibited for most of the bank's brokers because messages can't be filtered, he said.

"It would be huge if we could make it secure for our brokers," Bentley said. "As customers become more savvy, the brokers are also looking at IM as another way to communicate with their clients."

The company will likely evaluate the new Sametime capabilities internally first. If that test is successful, the software could later be rolled out to brokers, Bentley said. He said he supports about 70,000 Lotus Notes users running Version 6 clients and Domino 6.54 on the servers.

David Carswell Sr., president of The VIA Group Inc., a consulting firm in Houston, said his clients — which include Exxon Mobil Corp. and Halliburton Co. — are interested in external IM use but are hesitant because of security concerns. Connecting Sametime securely with the three widely used IM networks would be an incentive to revisit the issue, he said.

"It will make customers more comfortable because the application sits on their enterprise network under their security controls," Carswell said. He predicted that IBM's move will cause IM to propagate — "and probably quite quickly."

Robert Mahowald, an analyst at Framingham, Mass.-based IDC, said the move to link IM products could boost business at many companies.

"About 30% to 35% of the public AOL IM accounts are used by corporate consumers to get business done," Mahowald said. Thus, he added, with improved security, these users "will get access to a larger audience."

> **If the security is there, then I see no reason whatsoever that we wouldn't adopt it.**
>
> **DANIEL SINGLETON,** CORPORATE PROGRAMMER/ANALYST, ASSURANT SOLUTIONS

The new version of Sametime won't support communication with IM tools from Microsoft Corp., a more direct rival of IBM in the corporate IM market. Adam Gartenberg, manager for Lotus real-time and team collaboration at IBM, wouldn't comment on the absence of Microsoft, but he did note that support for more IM products may come later.

"Our goal is to allow users of Sametime to connect with any IM they want to," he said.

*Juan Carlos Perez of the IDG News Service contributed to this story.*

## IBM Ripens Notes for Macintosh

ORLANDO

**IBM'S LOTUS SOFTWARE GROUP** revealed a major shift in its Notes for Mac strategy with the unveiling of a new version of the collaboration software at last week's Lotusphere 2006 conference here.

Kevin Cavanaugh, vice president of development for Lotus clients, solutions and tools in IBM's software group, acknowledged that the updates are overdue. "We have sort of let Mac versions slip, so we're fixing that," he said.

Version 7.02 of Notes for the Mac, slated to ship in the third quarter, will include Lotus Sametime instant messaging software and support for Macintosh computers that run on Intel chips. Notes 7.02 for the Mac will run on the Mac OS X 10.4 operating system, also known as Tiger.

"We're committed to it," Cavanaugh said of the Notes Mac version. "We're going to be consistent across Mac, Windows and Linux in functionality and releases."

Vijay Sonty, CIO of Broward County Public Schools in Sunrise, Fla., said the move to improve Notes on the Macintosh is a big deal for his operation, which supports 275,000 students, 19,000 teachers and 231 schools. The district has a $200 million technology budget that includes $100 million for IT.

"This is a step in the right direction," Sonty said. "IBM is recognizing that there is a market for other operating systems."

For users, Sonty said, the improved Notes offering will enrich collaboration and communications with other users, regardless of their operating systems.

Meanwhile, Lotus also added Macintosh support for Domino Web Access, IBM's browser-based messaging client, for users running the Mozilla Foundation's Firefox browser. That support will be available in the third quarter of this year.

– TODD R. WEISS

## Correction

A story in last week's Technology section ("Endpoint Security Without the Pain") incorrectly identified Denise Reinert as an employee of Woolpert Inc. Reinert is general manager at Pearson Financial Group in Lake Oswego, Ore. The same part of the story also indicated that Woolpert is using Centennial Software Ltd.'s Centennial DeviceWall software. Pearson Financial uses that tool, while Dayton, Ohio-based Woolpert uses Senforce Technologies Inc.'s Endpoint Security Suite.

## Innovations by InterSystems

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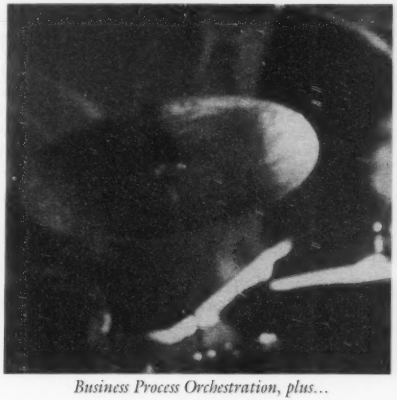
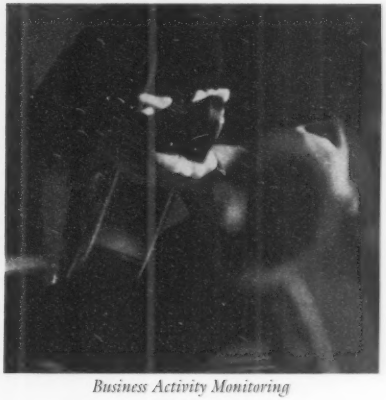
*Composite Application Development, plus...*



*Business Process Orchestration, plus...*



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# Siebel Users Are Willing To Wait for Oracle Plan

## But some are looking at competing CRM applications, just in case

BY MARC L. SONGINI

SEVERAL USERS interviewed last week said they are expecting benefits from the Oracle Corp./Siebel Systems Inc. combination, though those gains may take some time to emerge.

Oracle's $5.85 billion acquisition of Siebel is set to close tomorrow following a vote by Siebel shareholders. The two companies agreed to the deal in September.

To date, the disposition of Siebel products and technologies, such as its Business Analytics tools and the OnDemand hosted CRM offering, remains unresolved.

Oracle declined to comment for this story, stating that it would prefer to wait until the deal closes. But following the move to buy Siebel, Oracle executives had expressed interest in some of its offerings, including OnDemand, which is hosted on systems from rival IBM.

Despite the lack of a firm plan from Oracle executives, six Siebel users said they are still either upbeat or neutral about the deal. Three said they don't anticipate immediate benefits because they expect the integration of the companies and products to be a complex, long-term project.

"I think this integration is going to take a while," said Mike Thyken, CIO at Select Comfort Corp., a Minneapolis-based mattress retailer that runs the Oracle E-Busines Suite 11i and is installing Siebel's analytics application.

Like a number of users running both vendors' software, Thyken said he hopes that Oracle integrates its ERP software with Siebel's products at some point. However, Thyken added, large mergers "are big and difficult projects. I rather they take their time and do it right the first time rather than rush a half-baked integration out the door to please analysts."

"We don't have any expectations that this is going to be a quick merger," noted Robert Martens, director of global front-office technology at Ingersoll-Rand Co. The Hamilton, Bermuda-based provider of services and products to the transportation and other industries runs Siebel CRM, both in-house and through the OnDemand hosted format.

In the near term, Martens said he hopes Oracle, which provides his company with back-end ERP software, will create an OnDemand "global solution" by adding data centers throughout the world.

At the same time, Oracle is running the risk that some Siebel customers will turn to other vendors as it works on an integration plan.

"A number of customers are in a wait-and-see mode," said Rob Bois, an analyst at Boston-based AMR Research Inc. "They're evaluating potential alternatives" just in case Oracle moves in a direction they don't like.

On the other hand, noted Bois, replacing Siebel wouldn't be an easy task because many users have heavily customized the software. Any migration to a new supplier could take years, he said.

"Obviously, there is risk [that users will flee] with any acquisition like this," said Marc Hebert, executive vice president of Fremont, Calif.-based Sierra Atlantic Inc. and a user of Siebel CRM OnDemand and Oracle Financials software.

Oracle must undertake the same type of outreach done with the earlier PeopleSoft acquisition to avoid losing customers, he said.

"They need to make it as clear about [what] they are doing with Siebel as they did last year with PeopleSoft," Hebert said. ▸

### Oracle-Siebel Timeline

**2005**

**SEPT.:** While still digesting ERP rival PeopleSoft, Oracle agrees to buy Siebel in a friendly $5.85 billion acquisition; Oracle says Siebel's tools will become its core CRM offerings.

**OCT.:** Siebel ships its Component Assembly offering, after a lukewarm reaction from Oracle CEO Larry Ellison.

**NOV.:** Acquisition is approved by U.S. regulators.

**DEC.:** European Union regulators approve the deal.

**2006**

**JAN. 31:** Siebel shareholders slated to vote on deal, the final step of process.

# App Vendors Meet User Demand With BI Tools

## Products can aid upgrades, but they lack support for disparate data sources

BY HEATHER HAVENSTEIN

To meet increasing user demand for business intelligence, application and database vendors are muscling in on the BI tool market that has long been dominated by third-party suppliers.

For example, Whirlpool Corp. has opted to freeze new investments in BI tools from Business Objects SA, Information Builders Inc. and Cognos Inc., said Brian Murphy, director of geographic information systems development and business solutions at the Benton Harbor, Mich.-based maker of home appliances.

The company plans to replace those tools with an updated version of SAP AG's BI suite, called NetWeaver Business Intelligence, which is slated to ship this spring with NetWeaver 2004S.

Whirlpool has been using the new SAP BI tools since November as part of a limited test. That effort has already led the company to phase out Cognos BI tools at its Australian unit, he said.

Murphy said the new version of SAP's BI tools improves on earlier releases by closing gaps in front-end visualization and reporting capabilities.

Whirpool will continue to use predictive analysis tools from BI vendor SAS Institute Inc. to mine unstructured data because the SAP products focus mostly on structured data, Murphy said. Replacing most of its third-party BI tools with SAP software will ease Whirpool's integration requirements and eliminate the need for employees with multiple skill sets, he added.

John I. Haas Inc., a Washington-based producer of hops used in beer manufacturing, decided a year ago to buy BI tools from Oracle Corp. rather than from traditional BI vendors. The company wanted to avoid the disconnect that often occurs when back-end software is upgraded before the BI vendor can support the update, said Kyle Lambert, vice president of information systems.

Haas plans to upgrade the BI tools in April when it installs Oracle's E-Business Suite 11i.10.

John Hagerty, an analyst at AMR Research Inc. in Boston, said the enterprise application vendors — traditionally focused on transaction processing rather than analysis — have increased their focus on BI as users buy more tools from the BI-centric vendors.

"The enterprise vendors saw this as money they were leaving on the table," he said. As a result, the traditional BI players are "getting knocked around a little bit" by the enterprise application vendors.

### Multiple Data Sources

However, Hagerty also noted that the traditional BI vendors have the advantage of supporting disparate data sources, whereas the platform providers generally focus on their own data sources.

IBM's BI tool, the DB2 Data Warehouse Edition, overcomes some of the issues facing other platform vendors by supporting multivendor data sources.

Todd Grinaway, director of data warehousing and senior IT manager at a large health insurance company in Pennsylvania, plans to use the IBM tool set, unveiled last year, to access data from multiple sources.

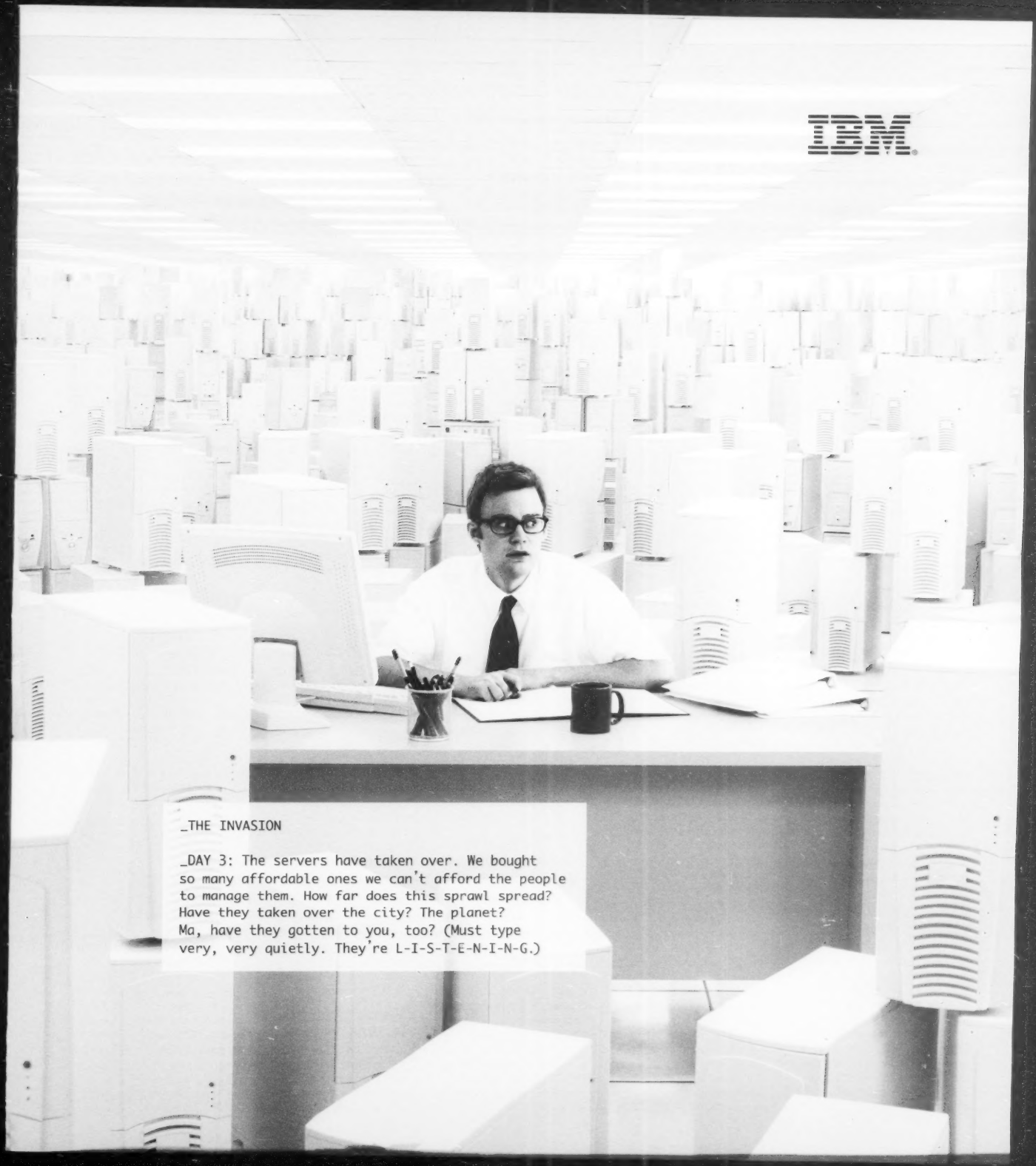
Grinaway also noted that using the IBM BI tools means that there "is one less finger-pointing exercise I have to go through" when something goes wrong. Nonetheless, the firm still uses third-party tools where appropriate, he said. For instance, the company plans to continue using BI tools from Business Objects for enterprise reporting. ▸

### Upping the BI Ante

**In addition to SAP, these ERP vendors are also updating BI tools:**

**Lawson Software:** It's in the process of developing a line of analytical applications that will be embedded in the company's enterprise applications.

**Epicor Software Corp.:** The midmarket ERP vendor is working on building a single SQL Server-based data warehouse that will run across all its product lines. The warehouse is due out later this year.


IBM
_THE INVASION
_DAY 3: The servers have taken over. We bought so many affordable ones we can't afford the people to manage them. How far does this sprawl spread? Have they taken over the city? The planet? Ma, have they gotten to you, too? (Must type very, very quietly. They're L-I-S-T-E-N-I-N-G.)

# BRIEFS

## Cisco Issues Patches For Multiple Flaws

Cisco Systems Inc. issued patches last week for vulnerabilities in an authorization feature in its Internetworking Operating System and for a weakness that might enable a distributed denial-of-service attack on certain VPN concentrators. The first vulnerability affects all Cisco products that are running Cisco IOS Version 12.0T or later under specific circumstances. The second flaw affects Cisco VPN 3000 series concentrators.

## Charges Cause EMC Q4 Profit Decline

Profit at EMC Corp. tumbled in the fourth quarter because of charges for job cuts and repatriation of income earned abroad, among other things.

EMC BY THE NUMBERS

| | REVENUE | PROFIT |
|---|---|---|
| Q4 '05 | $2.7B | $148M |
| Q4 '04 | $2.4B | $321M |

## Avaya to Resell Juniper Security

Avaya Inc. has signed an agreement to resell Juniper Networks Inc. security products alongside its own IP telephony gear. Avaya will integrate the offerings and provide support for the combined system. The move extends an earlier agreement between the two companies to ensure that the tools could be integrated. Under the new pact, some channel partners of the two vendors can also offer that package.

## AMD Promotes Meyer to President

Advanced Micro Devices Inc. has promoted Dirk Meyer to president and chief operating officer. Meyer was previously president and chief operating officer of AMD's microprocessor business. With Meyer's promotion, AMD Chairman and CEO Hector Ruiz gives up the title of president. He and Meyer will share the "leadership and management" of the company, AMD said.

# ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

DAVID CLARK

# Spammers Steal IP Addresses . . .

**. . . and threaten the Internet's system of trust among networks.** Malware malcontents, especially spammers, are temporarily stealing IP addresses from their rightful domains and using them as their own for as little as five minutes but as long as a day. Dave Rand, chief technologist for Internet content security at Trend Micro Inc.'s U.S. operations in Cupertino, Calif., argues that these illegal exploits threaten the basic trust system among the 22,000-plus networks that make up the Internet. Spammers exploit the Border Gateway Protocol's method for presenting the unique addresses on each network by nabbing bunches of them and temporarily assigning them to their own routers — an attack called a BGP injection. "There's no central source monitoring all of the address blocks on the Internet," Rand says. "The only telltale sign that your addresses have been hijacked is that traffic on the network [from which they've been stolen] is reduced." Not that long ago, the price of a router required to pull off the crime made BGP injection exploits cost-prohibitive. "Now you can get one on eBay for 150 bucks," Rand points out. What's most dangerous, he says, is that while spammers have a hold of your IP address, they aren't merely using it to send spam — they *are* your address. Privileged information coming to that IP location is now in their hands. The ramifications, of course, are unsettling. Rand says Trend Micro is working on a protection scheme. But right now, he warns, there isn't a darn thing you can do.

**5k**
Times per day IP addresses are stolen via BGP injection exploit, says Trend Micro.

## Encrypt everything, everywhere, and . . .

**. . . do it all the time.** Jim Greenway, vice president of marketing at Array Networks Inc. in Milpitas, Calif., says users of his company's SPX line of SSL VPN appliances no longer just scramble data for remote workers and road warriors, or those using wireless LANs. Customers also are applying encryption policies for users on wired LANs, Greenway says. "They want ubiquitous security," he notes. To help support the growth of encryption, Array is doubling the number of virtual private network portals available on the SPX devices to 256 as part of a software upgrade due next week. Pricing for the appliances starts at $6,000.

Array says its SPX appliances can help users encrypt all of their data.

## Corporate blogs may imperil . . .

**. . . knowledge management systems.** Well, maybe "knowledge management with a small 'k,' " suggests Robin Hopper, CEO of iUpload Inc. in Burlington, Ontario. The company's Enterprise Blogging Suite 2.0 software, available today, gives you a slew of policy options for managing blogs, down to a specific blog post. The new version is linked to CRM systems like Salesforce.com, so you can automatically push relevant blog info to customers and partners. Hopper says the 2.0 release also lets you "wikify" a blog post so others can expand, modify and correct information. Ultimately, he thinks, corporate blogs will not be about content from individuals, but about an organization's subject-specific knowledge. That might even free IT from supporting knowledge management systems with a capital K. Subscription pricing starts at $1,250 per month.

HOPPER: Are blogs the next corporate KM systems?

## Management tool for data centers . . .

**. . . moves to open-source, then will go proprietary again.** Qlusters Inc. in Palo Alto, Calif., this week will unveil openQRM, its open-source systems management software for Linux servers. Until now, the company has sold the tool as proprietary technology. CEO Ofer Shoshan says the software can manage up to 5,000 systems and lets you establish policies to automatically provision Intel-based servers with Linux and applications. William Hurley, chief technology officer at Qlusters, claims that most provisioning of Linux systems is done with homegrown scripts, which become problematic once you get beyond 100 servers. Next summer, Qlusters will release Enterprise QRM, a proprietary version that will add features not available in the open-source edition. You can get openQRM service and support from Qlusters starting at an annual fee of $750 per server.

## Virtualize all of your apps in the . . .

**. . . Linux, Windows and now Solaris worlds.** And you don't need agent code running on your systems. That's the promise Bill Coleman, CEO of San Jose-based Cassatt Corp., makes about his company's Collage tool. Coleman says Collage 3.2 lets you set policies for application service levels instead of tying applications to a specific machine or cluster. "You can scale up or out, based on utilization and quality-of-service needs," he says. Collage strips away elements that bind applications to a given machine and monitors the apps to ensure that their performance meets service-level agreements. The new release includes support for Solaris on Sparc and adds policy tools for Web services. An average deployment costs $100,000. ▸

COLEMAN: Don't bind apps to a single server.

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# DHS Needs More Contact With State, Local IT Execs, Surveys Show

## Many respondents say they know little about federal cybersecurity programs

BY JAIKUMAR VIJAYAN

THE RESULTS of two small surveys released last week suggest that more than three years after the federal government developed a national strategy to secure cyberspace, there is still a divide between the U.S. Department of Homeland Security and state and local governments on the handling of cyberthreats.

The surveys were conducted by the National Association of State Chief Information Officers (NASCIO) and the Metropolitan Information Exchange (MIX) as part of a coordinated effort to gather feedback about the DHS from state and local IT and security managers.

The input gathered by the two organizations shows that "there's room for improvement" in the cybersecurity relationship between the DHS and state and local authorities, said Janette Pell, CIO of California's San Luis Obispo County.

Many of the respondents said that they had very little knowledge about DHS cybersecurity programs because of a complete lack of communication, according to Pell.

Lexington, Ky.-based NASCIO received responses from chief information security officers (CISO) in 27 states, while MIX, an association of county and municipal CIOs, based its findings on responses from 23 local government IT managers.

Denise Moore, CIO for the state of Kansas, said during a press conference last week that the purpose of the survey wasn't to be critical of the DHS but to provide "constructive advice" on how to advance the nation's cybersecurity efforts.

### Let's Get Together

Among the major recommendations of the CISOs who responded to the NASCIO survey was a call for a closer working relationship between the DHS and state and local governments, compared with the more "detached" relationship that now exists, Moore said.

The CISOs also called for the DHS to add a cybersecurity assessment component to the State Homeland Security Assessment and Strategy Process that the agency conducts, according to Moore, who added that such an assessment is important to ensuring that state and local governments pay enough attention to online security.

Resources such as the Multi-State Information Sharing and Analysis Center and regional Infragard chapters — which are information-sharing partnerships between the FBI and IT professionals — also need to be better used to promote DHS programs and to develop and promulgate cybersecurity best practices, tools and methodologies, according to Moore.

"I wouldn't say the DHS has dropped the ball as much as it has neglected to make [cybersecurity] a priority," she said.

As a result, the DHS is rarely the first contact on cybersecurity issues for government security staffers in Kansas, state CISO Larry Kettlewell said during the press conference.

"We've had a couple of experiences here in Kansas where frankly the federal government wasn't my first go-to [entity]," Kettlewell said.

Instead, he said, he looked to the private sector because of the greater expertise and experience that security vendors have in dealing with cyberthreats.

Currently, Kettlewell's staff is trying to cope with the Nyxem worm, which is programmed to overwrite all of the files on computers it infects starting Feb. 3.

"Frankly, I'm not looking at that much information from the federal government" about the worm, Kettlewell said.

DHS officials didn't respond to requests for comment about the surveys before publication time.

### Security Wish List

Recommended actions for the DHS from respondents to NASCIO's survey of state-level chief information security officers include the following:

- Create fellowships for state and local CISOs at the DHS's National Cyber Security Division.
- Add a cybersecurity assessment component to the State Homeland Security Assessment and Strategy Process.
- Reduce duplicative DHS alerting services and improve timeliness of cybersecurity alerts.
- Provide more localized education opportunities in information security.

# Labor Crunch Pushes State Government IT Departments Toward Outsourcing

## Hiring problems, aging systems leave internal staffs scrambling to keep up

BY PATRICK THIBODEAU

Tom Wade, CIO for the state of Georgia, is dealing with aging systems, a graying IT workforce and an inability to pay private-sector wages. And as private-sector wages continue to rise as the economy improves, Wade said he hasn't been able to fill 15% of the IT positions he is allotted.

TOM WADE says that outsourcing is "never off the table."

It took a year and a half to hire someone to manage the IT department's enterprise architecture division, a job that finally was filled this month. Corporate employers were paying more than the $125,000 per year that the state could offer to applicants. "We're not competitive," Wade said.

One solution to his problems may be outsourcing. "It's never off the table," he said. "It's something we always have to look at."

If Reston, Va.-based consulting firm Input is right, many more state and local governments will turn to IT outsourcing over the next few years to deal with the same issues Georgia is facing. Last week, Input forecast that state and local spending on outsourcing will increase from $10 billion last year to $18 billion by 2010, a compound annual growth rate of 12%.

Input analyst James Krouse sees Virginia as a bellwether for the rest of the nation. In November, Virginia officials approved a 10-year, $2 billion agreement to hand over management of the state's IT operations to Los Angeles-based Northrop Grumman Corp.'s technology services unit. "Virginia is a prime case that is looking at something that could be a precursor for things to come," he said.

San Diego County in California awarded one of the first big local-government outsourcing contracts in the U.S. to El Segundo, Calif.-based Computer Sciences Corp. seven years ago. After rebidding the contract, the county's board of supervisors last week voted to switch vendors and awarded the Northrop Grumman Information Technology operation a seven-year deal valued at $667 million.

The 305 CSC workers assigned to the county, many of whom worked directly for the government prior to the first outsourcing agreement, will now be interviewed for jobs at Northrop Grumman, said county CIO Michael Moore.

With the new contract approved, Moore said his focus will be on ensuring that a smooth transition is completed by October, when the county's data center is scheduled to be turned over to Northrop Grumman.

Moore said the contract should also reduce the county's operating costs by helping to increase worker productivity. For instance, new mobile systems will eliminate the need for workers in the field to return to their offices to process forms, he said.

Otto Doll, CIO of the South Dakota state government, also sees new interest in outsourcing among his peers. "Right now, there is a big drive toward consolidating services — and one of the options when one looks at consolidating is whether you are going to do it in-house or whether you are going to outsource it," he said.

But in his case, Doll said, South Dakota uses outsourcing in only a limited way, such as hiring contractors to help with application development. The state has compared the cost of outsourcing against providing IT services internally, he said, and hiring an outsourcer "doesn't prove to be a viable economic decision for us."

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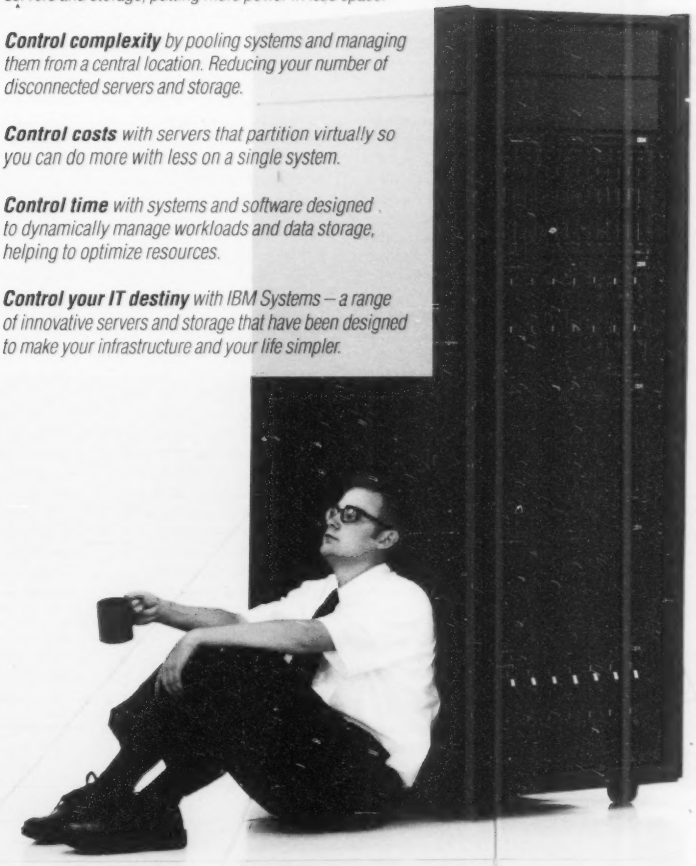

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## BRIEFS

### Firewall Set to Be Shipped With Vista

Microsoft Corp. is readying a configurable firewall for its upcoming Windows Vista operating system that is designed to give administrators control over which applications can run on the systems they manage. Microsoft said the firewall has been undergoing tests over the past month and is on track to be included in the first release of Vista, which is due later this year.

### Troubled Sun Posts $223M Loss in Q2

A turnaround continues to elude troubled Sun Microsystems Inc., which posted a $223 million loss in its second fiscal quarter despite a 17% increase in revenue.

SUN BY THE NUMBERS

| | REVENUE | PROFIT/LOSS |
|---|---|---|
| Q2 '06 | $3.3B | ($223M) |
| Q2 '05 | $2.8B | $4M |

### IBM Buys Systems Software Vendor

IBM has acquired CIMS Lab Inc., a maker of software that lets businesses track computing resource usage, for an undisclosed sum. IBM said it will use the purchase to add financial management to its range of IT services management products. CIMS will become part of IBM's Tivoli management software group, and its products will be integrated with Tivoli offerings, IBM said.

### IBM Mainframe Chip, Database on Tap

IBM plans to release a specialty chip for its z9 mainframe this year that's designed to handle the workloads of business intelligence, ERP and CRM applications. The chip, the System z9 Integrated Information Processor, will be priced at $125,000. IBM declined to provide further details on delivery plans. It also said that it plans to bring out a new version of DB2 for the z/OS operating system this year with enhanced XML, WebSphere and Java integration and security features.

# Former Mass. CIO Says Job Became Too Political

BY CAROL SLIWA

IN HIS former job as CIO for the state of Massachusetts, **Peter Quinn** was thrust into the spotlight when he spearheaded an initiative to move state agencies away from proprietary formats for storing documents. Quinn increasingly found himself defending the plan to adopt the XML-based Open Document Format in the face of opposition from Microsoft Corp. and a collection of legislators, government officials and special interest groups.

Last week, he spoke with *Computerworld* about his decision to resign as CIO, effective earlier this month. Quinn cited factors such as the removal of IT projects from a pending bond bill, an amendment to an economic stimulus bill that would shift authority for making major IT policy and procurement decisions from the CIO to a new task force and a review of out-of-state trips he took to speak at technology conferences. (The review, which was launched after *The Boston Globe* began investigating the trips, showed that Quinn didn't violate any conflict-of-interest standards or other rules.) Excerpts from the interview follow:

**What triggered your resignation?** The bond bill was going to get reported out of the [state] legislature for highway [projects] and for buildings, but not for IT. This was the last thing that happened just before Christmas. . . . So, enough is enough for me.

What was beginning to happen was all the good IT projects were, in fact, either going to be stopped or marginalized because I had become a lightning rod for a great deal of opposition. And these were things that really had no relationship to me.

I might have set the priorities, but these [projects that were to be funded through the bond bill] were for other agencies and for things that are really needed in the commonwealth, like a new taxpayer system and a new Registry of Motor Vehicles system.

I always had a couple of goals. One was that I wanted IT to be apolitical, and it was now becoming a huge political football. And, two, the kind of things that I took the job to do in the state were not things I was spending my time on anymore. I was spending my time on political stuff, and it's not really where I wanted to devote all my energies. It wasn't going to really advance the agenda of the good IT work that was being done.

So I thought, at the end of the day, I was becoming too much of an impediment to things, and I wasn't enjoying it anymore. And then the whole investigation and that type of stuff — it definitely took its toll on me from a personal standpoint and a family standpoint, and I just didn't want to continue to do that.

**Did you feel that the opposition to you was spreading?** It was spreading to people that aren't fluent in the IT area and, for the most part, don't know me from a hole in the wall.

**What do you think is going to happen to the Open Document initiative? You're not there anymore. Your former boss, who also championed the project, is gone as well. Gov. Mitt Romney has pledged to move forward, but he isn't running for re-election. The opposition could just stall and throw it all out, couldn't they?** You know, it could happen. But on the other side, we asked for something very simple. We asked to have formats that were unimpeded by proprietary restrictions and licenses, and we asked people to adhere to recognized standards bodies. It's not something that's totally unreasonable at all. ▸

# HP Turns on Tap for Cooling Servers

BY PATRICK THIBODEAU

Hewlett-Packard Co. today is expected to detail a water-based cooling system for its high-density servers and a standardized server rack that replaces seven existing models and will be the base platform for the cooling technology.

HP's move into fluid-based cooling follows IBM's release last July of an add-on water-cooled unit for its server line. And last week, blade server maker Egenera Inc. announced an offering called CoolFrame that integrates Liebert Corp.'s X-treme Density (XD) cooling technology with a new 24-blade enclosure.

Liquid cooling, once a staple of mainframe-oriented data centers, is returning to the mainstream as some IT managers look for ways to keep their increasingly dense and power-hungry servers chilled.

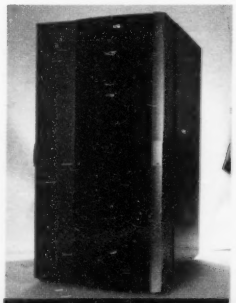
"I think liquid cooling is here to stay, and customers will want standardization — plug-and-play capabilities," said Paul Perez, vice president of storage, networking and infrastructure for HP's industry-standard servers unit.

Perez said HP is talking with rival vendors as well as standards organizations about the need for things such as standardized fittings for tapping into chilled water supplies. "What we're after is some consistency of experience for customers," he said.

But vendors' enthusiasm for liquid cooling will meet resistance from users like George Horvath, who manages Memorial Sloan-Kettering Cancer Center's 18,000-square-foot data center in Lyndhurst, N.J. "I'd prefer not to have any of those cabinets here," said Horvath, adding that facilities managers in particular are going to be worried about leaks.

HP's Modular Cooling System is a self-cooled 42U rack that costs $30,500 and can cool racks of blades that consume up to 30 kilowatts of power. Because the unit is self-contained, it doesn't have to be located in a data center and can be placed in air-temperature rooms, HP said.

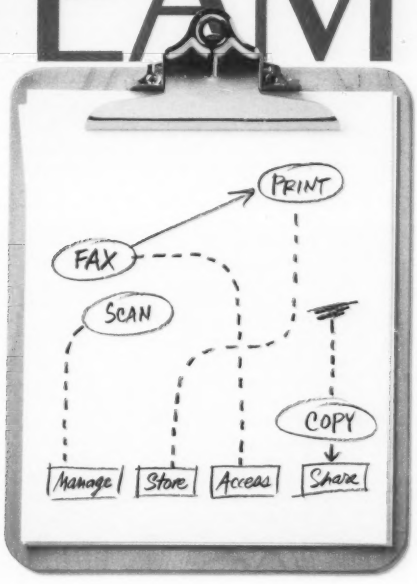
Marlboro, Mass.-based Egenera said its third-generation BladeFrame EX enclosure uses x86-based processors in an integrated, virtualized system that allows computing resources to be allocated to applications as needed.

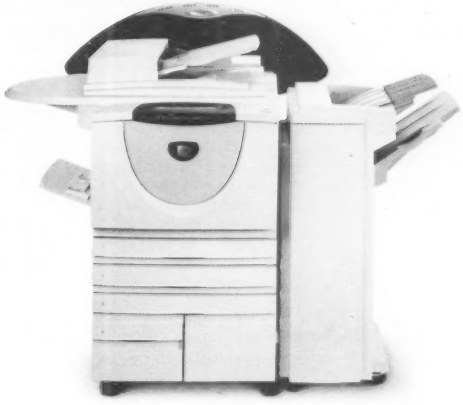


HP says its new cooling unit doesn't have to be in data centers.

Liebert, which is a unit of Emerson Network Power, uses a coolant other than water in XD, an approach that it says is more efficient. The cooling technology adds about $300 to $400 per blade server to the cost of rack systems, said Susan Davis, Egenera's vice president of marketing. ▸

# TEAM PLAYER



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# CIO Set to Link Ameritrade, TD Waterhouse IT Systems

BY LUCAS MEARIAN

AMERITRADE Holding Corp. in Omaha completed its acquisition of New York-based TD Waterhouse Group Inc. last week, creating a combined company called TD Ameritrade Holding Corp. **Jerry Bartlett**, who was named Ameritrade's CIO in September, spoke with *Computerworld* about the challenges of merging the IT systems of the two financial services firms.

**Your two companies are a thousand miles apart. What integration issues will that cause?** I don't view that as an issue. Ameritrade has legacy operations on the East Coast — close to 100 technologists. We have already been operating in a dispersed mode anyway. What's kind of cool about TD Waterhouse is that their entire IT organization, with the exception of five people, is right across the street from our Jersey City location.

**What's the biggest integration challenge?** It's making the personnel and culture things work well. The technologies are fairly similar. Two or three months ago, we already made the decisions on which systems were going to survive and which would be retired.

**How many layoffs will result from this merger?** Over the last three months, we went through an objective, performance-based assessment of all 800 technologists between the two combined firms and made decisions there. Over the course of the next 18 months, we're going to go from 800 folks to about two-thirds of that.

**As the new CIO for TD Ameritrade, what are your objectives for the next year?** The integration is my No. 1 priority. We will [also] be focusing on a data center strategy that's moving us toward an active/active [clustering] approach. That's not something Ameritrade's done typically. We're going to continue to deliver innovative products to our client base. Not doing that is why many merger integrations fail. We're also going to focus on business intelligence in the data warehouse. To do that, we need to improve our data warehouse and improve the sophistication of our business intelligence tools.

**What's wrong with your current data warehouse?** Just the structure of many of our databases makes it very difficult to correlate. While I'm not looking for a purely relational model, I'm looking for something that makes it easier to lay analytical tools on top. We also want to get to a new level of granularity around the data that we collect on our clients' behavior.

**What other technologies are you looking at?** I've got four data centers that are going to two over the next 12 to 18 months. There will be excess hardware that I'll be able to leverage. Storage is an area that obviously we're looking at. Our strategy is to have a more economical approach to our storage.

**What are the storage technologies that will help you go down that tiered road?** We are interested in virtualization. We've not strayed far from the beaten path, and that's something we believe is one of two new areas we want to look at, the other being voice over IP.

**What are the biggest security threats these days?** If you look at what's worrisome, not just for me but for my peers, particularly in this industry, it's security and the protection of our clients and their data and assets. If we lose that, we lose.

The good news is we've done some amazing things to protect our perimeter. In fact, in the November-December time frame, we rolled out brand-new encryption technology. Nothing leaves our data centers that isn't on an encrypted tape. Our biggest threat is what happens on our clients' computers. We're very serious in addressing that. ▸

# CA Combines Asset Tools in Integrated Suite

BY MATT HAMBLEN

Computer Associates International Inc. today will announce a suite of software tools for merging IT asset management functions ranging from hardware inventory to contract management.

The initial three products in the suite will rely on CA's common management database, which the company is using to integrate the components of the Unicenter Release 11 software that it detailed at the CA World conference in Las Vegas two months ago.

The Asset Management r11 suite being announced today includes revised versions of CA's Unicenter Asset Management, Asset Portfolio Management and Asset Intelligence tools. Supported functions include discovery and inventorying of IT equipment, software license management and vendor management, according to CA officials.

In the future, the company will add other products for software distribution and patch management, said Allan Andersen, director of product management at CA.

Harry Butler, solutions center manager at EFW Inc., an electronics supplier in Fort Worth, Texas, beta-tested the Asset Management suite and has begun implementing it. Butler said the new tools are more sophisticated than previous versions were. For example, he can track new laptops when they arrive at EFW's loading dock via bar codes and assign usernames, passwords and some applications to them days before the machines reach end users.

"In the past, I had to keep a manual spreadsheet with the laptops on the dock, and it would be a while before the machine was finally on the network and [recognized] in the inventory," Butler said. "This allows me to have more knowledge of my operation."

Al Porco, CIO at Central Brooklyn Family Health Network in New York, said he has been using Unicenter Asset Management for two years and will put the new r11 version in production within the next month. The most important new feature is "being able to have in one place the full life cycle of an asset, which will help in making intelligent business decisions," he said.

A beta version of the tool has already helped Porco identify which laptop PCs in production use at the health care provider had been identified by a vendor as having motherboard problems. "We got them replaced before they failed," he said.

Rich Ptak, an analyst at Ptak, Noel & Associates in Amherst, N.H., said the new suite of products is "an enormous step forward for CA." Ptak added that he has not seen CA's major competitors in the management tools market, including IBM's Tivoli unit, Hewlett-Packard Co. and BMC Corp., demonsrate the same ability to compare different kinds of information. ▸

## Makeover Effort Continues at CA

**CA'S REBUILDING EFFORT** remains a work in progress, as shown by the company's mixed third-quarter financial results and its announcement of another reshuffling of its executive ranks.

The company named Mark Barrenechea, an executive vice president, to take over the chief technology officer position that CA veteran Yogesh Gupta had held since 2000. Barrenechea previously was chief technology architect, with responsibility for leading CA's acquisition activities. As CTO, he will continue reporting to CEO John Swainson.

Gupta will now be senior vice president of business development and will work with CA's acquisitions team to evaluate the technology assets of potential buyout targets, according to a CA spokeswoman.

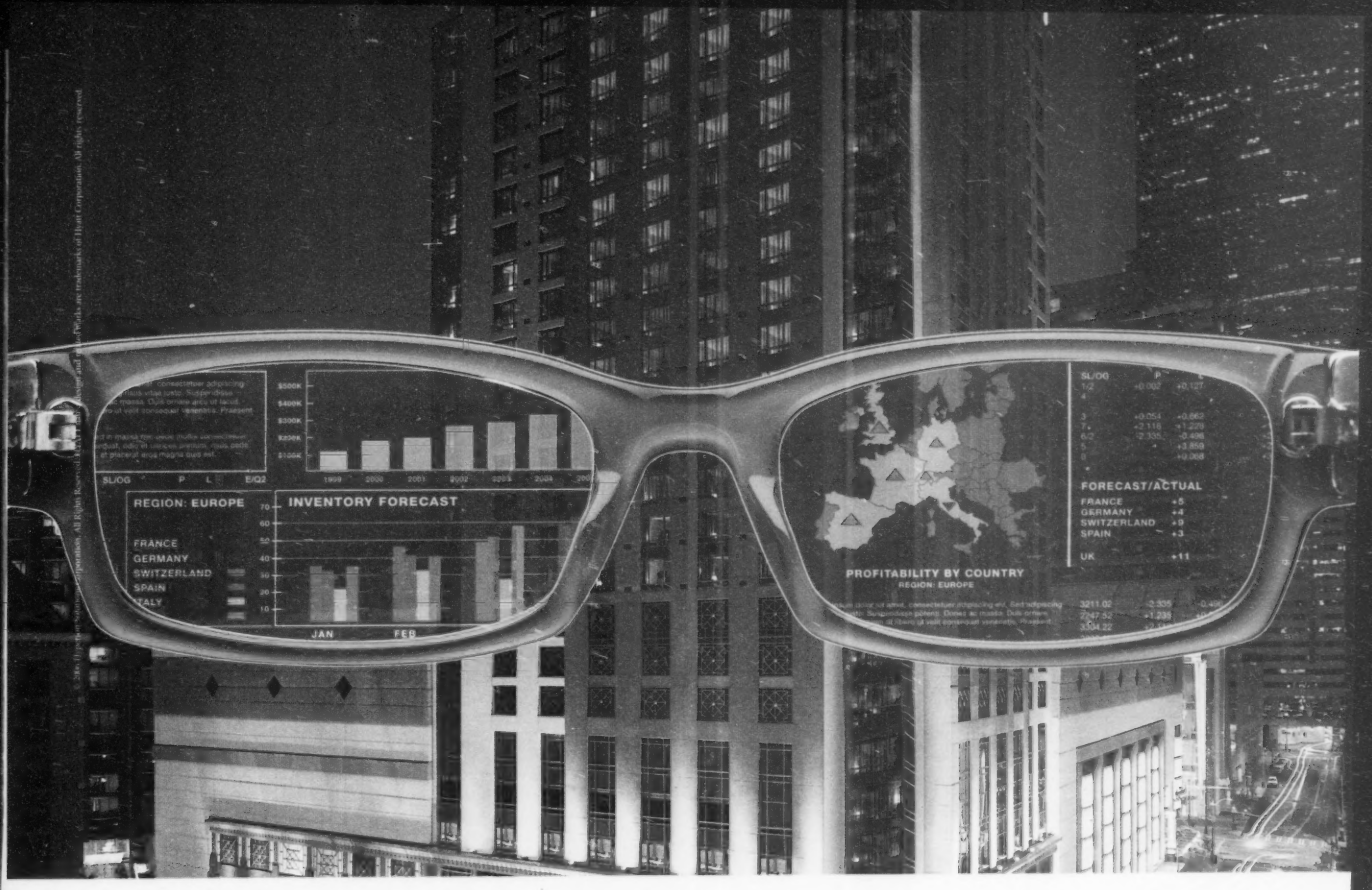
For its third quarter, which ended Dec. 31, CA reported a 5% revenue increase over the same period a year ago. But strong bookings in North America were offset by declining sales overseas, a problem executives attributed to ongoing restructuring in CA's international sales operations.

CA's mainframe software revenue also declined, prompting the company to map out a turnaround plan that includes better interaction with users and more-rapid support for new mainframes.

The third-quarter showing "underscores the 'multiyear journey' CA is undertaking just to reach a stable to even slightly growing bookings trajectory," Goldman Sachs & Co. analyst Sarah Friar wrote in a research note last week.

Swainson said during a conference call that he's committed to riding out the turbulence of rebuilding CA. "We're continuing to change the DNA of the company," he said. "Changes like this take time and despite the best planning are never as swift or as smooth as we would like."

– STACY COWLEY, IDG NEWS SERVICE

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# WHO ARE THE KEY DECISION MAKERS AT GLOBAL HYATT?

[ Their 80,000 employees ]

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# GLOBAL DISPATCHES

An International IT News Digest

## Microsoft Promises to License Source Code

**BRUSSELS**

MICROSOFT CORP. last week agreed to license the source code for some of the communications protocols in its Windows server software, in an attempt to avoid daily fines of €2 million ($2.4 million U.S.) by the European Commission.

"I don't believe any decision to implement a fine is warranted," Brad Smith, Microsoft's general counsel, said at a press conference in Brussels following the announcement. Smith added that the source-code licensing plan should remove "any doubts" among European officials about Microsoft's compliance with the EC's March 2004 antitrust ruling against the vendor.

However, a spokesman for European Competition Commissioner Neelie Kroes said that the licensing offer is "not necessarily enough" to head off the fines. "It would be premature to conclude [that] access to the source code would resolve the problem of the lack of compliance with our decision," the spokesman said, adding that Microsoft needs to provide "the right information to allow competitors to make Microsoft-compatible workgroup server products."

As part of the antitrust ruling, the EC ordered Microsoft to license the protocols for its workgroup server software so other vendors can develop products that interoperate smoothly with Windows. Last month, the commission charged that Microsoft wasn't complying with the ruling and threatened to start fining the company.

Before Microsoft announced the licensing plan last week, the EC agreed to extend the compliance deadline that it set in December from last Wednesday to Feb. 15.

■ SIMON TAYLOR, IDG NEWS SERVICE

**GLOBAL FACT**

**33%**

**The percentage of Western European companies that run open-source databases.**

SOURCE: IDC, FRAMINGHAM, MASS.

## Tokyo Exchange Hires CIO, Boosts IT Capacity

**TOKYO**

TOKYO STOCK EXCHANGE INC. last week named a new CIO in the aftermath of an early shutdown of trading that prompted the exchange to shorten its trading hours indefinitely and led to widespread criticism of its IT management.

The operator of the world's second-largest stock market tapped Yoshinori Suzuki, formerly an executive at Nippon Telegraph and Telephone Corp., to oversee its IT strategy. Suzuki, 57, will assume the CIO post on Feb. 1.

The move came just a week after the exchange was forced to halt trading 20 minutes early on Jan. 18, when its computer systems nearly reached their daily limit of processing 4.5 million trades. Officials then decided to shorten the trading day by 30 minutes for what they described as "the foreseeable future."

Since then, the exchange has boosted the processing capacity to 5 million trades per day, and it plans to begin using a new trade-clearing system today. However, that won't provide any further capacity boosts.

Exchange officials have announced vague plans to increase the daily volume of the new system to as much as 8 million trades later this year. Suzuki will have to determine how much the system should be expanded and set a time frame for the upgrade.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

## CEO, Other Top Execs Arrested at Portal Firm

**TOKYO**

THREE TOP executives of Internet portal operator Livedoor Co. were arrested last week for allegedly violating Japanese securities laws.

The arrests came a week after law enforcement officials raided the offices of Tokyo-based Livedoor and several affiliated companies. The raids caused investors to panic, leading to a flood of online trading that played a major role in stressing the systems at the Tokyo Stock Exchange.

The Tokyo District Prosecutors' Office arrested Livedoor CEO Takafumi Horie as well as the company's chief financial officer and the president of its Livedoor Marketing Co. subsidiary. Horie stepped down after his arrest and was replaced as CEO by Kozo Hiramatsu, who had been a senior vice president at the company.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

## CDC Drops Onyx Bid, Buys Another Vendor

**HONG KONG**

CDC CORP., a Hong Kong-based company that owns a variety of software and IT services firms worldwide, has withdrawn its bid for a majority stake in Onyx Software Corp. The decision ends the specter of a drawn-out struggle for control of the Bellevue, Wash.-based CRM vendor.

Separately, CDC reached an agreement to buy JRG Software Inc., a San Mateo, Calif.-based provider of hosted supply-chain management software for packaged goods manufacturers. The purchase price wasn't disclosed.

CDC said on Jan. 20 that it was discontinuing its attempt to win over Onyx's board of directors, citing the board's resistance to further discussions as well as Onyx's climbing stock price. The announcement came two weeks after the Onyx board rejected CDC's offer to pay up to $50 million for a majority ownership position.

Steven Chan, CDC's acting CEO, said in a statement that the company will continue to seek willing acquisition targets in the business applications market. Since 2003, CDC has acquired vendors such as Pivotal Corp. and Ross Systems Inc.

■ STACY COWLEY, IDG NEWS SERVICE

## Google Offers Censored Search Service in China

**TAIPEI, TAIWAN**

GOOGLE INC. last week said it was launching a search service aimed at users in China that will block them from seeing results deemed likely to offend the Chinese government.

The *www.google.cn* site will notify users that rejected searches are being blocked because the information being sought is politically sensitive, Google said. The Mountain View, Calif.-based company has been operating a search engine aimed at Chinese users from the U.S. but decided to open a server center inside China in an attempt to speed up searches.

"While removing search results is inconsistent with Google's mission, providing no information — or a heavily degraded user experience that amounts to no information — is more inconsistent with our mission," Andrew McLaughlin, Google's senior policy counsel, said in a statement. (See editorial, page 26.)

■ DAN NYSTEDT, IDG NEWS SERVICE

*Compiled by Mike Bucken.*

## Briefly Noted

**Microsoft Corp. said it worked with investigators from the Bulgarian National Service for Combating Organized Crime in an investigation that culminated last week with the arrest of eight people for allegedly stealing financial information by using a variety of fake Web pages carrying Microsoft logos. The thefts netted the group at least $50,000 U.S., according to Microsoft.**

■ JEREMY KIRK, IDG NEWS SERVICE

**Hynix Semiconductor Inc. in Kyoungki-Do, South Korea, will be hit by the Japanese government with countervailing duties of about 27% on its dynamic RAM chips. Japan alleges that low-cost loans from state-controlled Korean banks have amounted to unfair subsidies for the chip maker. The U.S. and the European Union have imposed similar duties on Hynix, which denies receiving illegal subsidies.**

■ DAN NYSTEDT, IDG NEWS SERVICE

**Yahoo Inc. last week disclosed plans to open research facilities in Santiago, Chile, and Barcelona, Spain, to tap into engineering resources in Latin America and Europe. The offshore operations will research the relevance of search-engine results, text mining and categorization of documents.**

■ JUAN CARLOS PEREZ, IDG NEWS SERVICE

**Asianux, a consortium of Linux vendors, will set up a joint-venture company this year to promote and further develop its version of the open-source operating system, according to an executive familiar with the plans. The three members of the group – Red Flag Software Co. in Beijing, Haansoft Inc. in Seoul, South Korea, and Miracle Linux Corp. in Tokyo – hope that the Beijing-based venture will attract more customers for the Asianux software.**

■ SUMNER LEMON, IDG NEWS SERVICE

**Swisscom AG said CEO Jens Alder has resigned, citing government opposition to his expansion strategy for the Bern, Switzerland-based telecommunications carrier. Carsten Schloter, who was previously in charge of Swisscom's mobile phone division, was named to replace Alder. In November, the Swiss Finance Ministry forced Swisscom to halt efforts to acquire foreign firms.**

■ JOHN BLAU, IDG NEWS SERVICE

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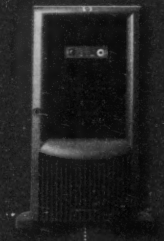

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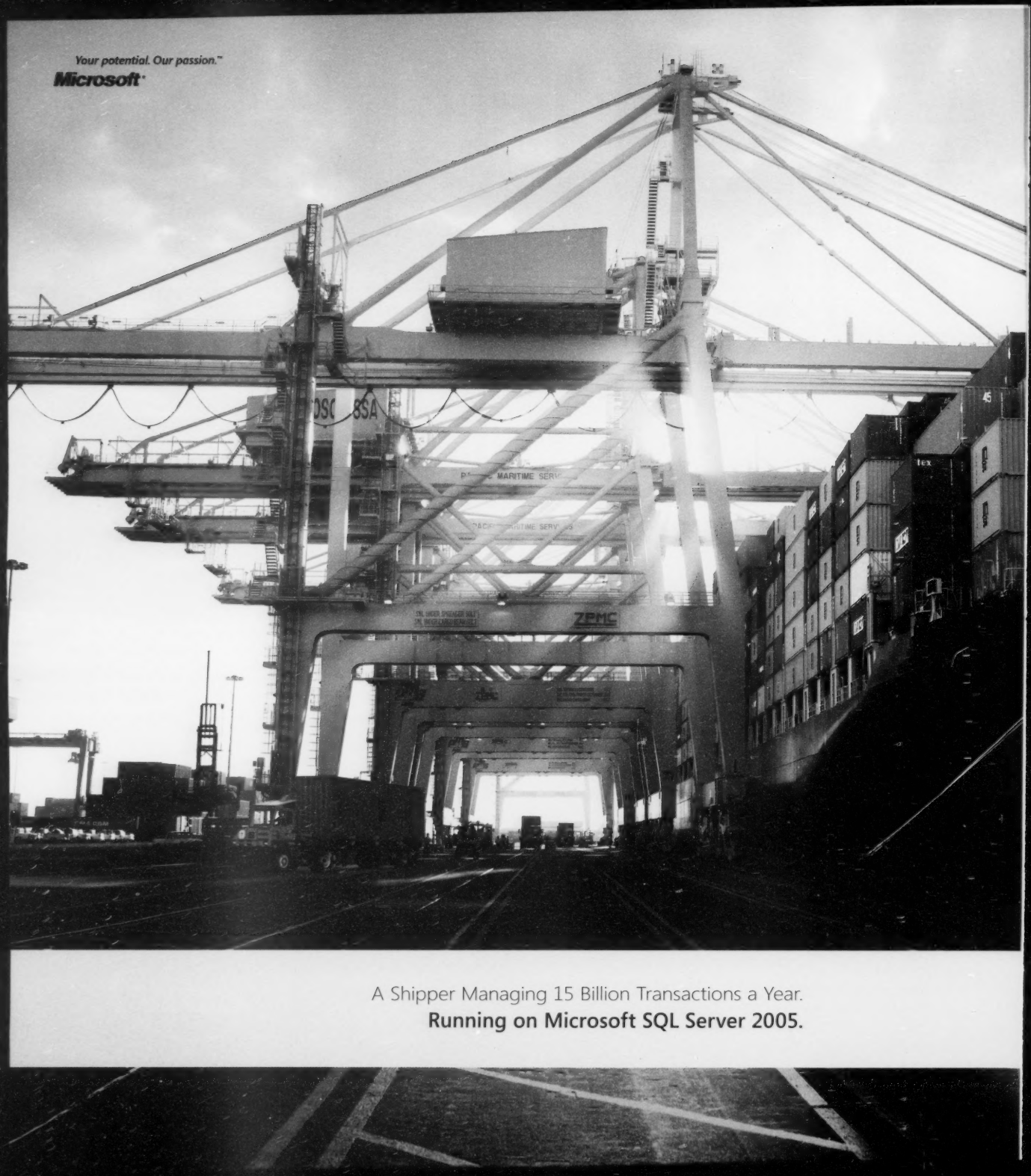


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| | |
|---|---|
| 8:30am – 8:40am | **Introduction and Overview** |
| 8:40am – 9:30am | **Market Outlook and Trends**<br>Jean S. Bozman, Research Vice President, IDC |
| 9:30am – 10:00am | **IT End-User Case Study**<br>Ashley Ekola, Director of Infrastructure, Pier 1 Imports |
| 10:00am – 10:15am | **Refreshment and Networking Break** |
| 10:15am – 10:45am | **Slashing Cost and Complexity with Open Source Software and Commodity Hardware**<br>Dan Agronow, Chief Information Officer, The Weather Channel Interactive (TWCi) |
| 10:45am – 11:15am | **Delivering Results Rapidly**<br>Gary Greenwald, Chief Technology Officer, Ameritrade |
| 11:15am – Noon | **Panel Discussion: Creating an Agile Enterprise IT Architecture is Easier Said than Done**<br>This panel of CIOs discuss strategies, tactics and lessons learned on the front lines of re-architecting their IT infrastructures to support ever-changing business requirements and enable faster, better business performance.<br>Moderator: Julia King, National Correspondent and Executive Editor, Events, Computerworld<br>Panelists: Ashley Ekola, Director of Infrastructure, Pier 1 Imports<br>Dan Agronow, Chief Information Officer, The Weather Channel Interactive (TWCi)<br>Gary Greenwald, Chief Technology Officer, Ameritrade |
| Noon | **Program Concludes** |

Selected speakers include:

*Jean S. Bozman*
*Research Vice President, IDC*

*Ashley Ekola*
*Director of Infrastructure Pier 1 Imports*

*Dan Agronow*
*Chief Information Officer The Weather Channel Interactive (TWCi)*

*Gary Greenwald*
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# Microsoft Ships Web, Content Design Tool Betas

## Products make up two-thirds of Expression suite

**BY ERIC LAI**

Microsoft Corp. last week began distributing beta versions of two of the three applications in its upcoming Expression suite of Web and content-design software.

The fourth Community Technical Preview (CTP) version of Expression Graphic Designer, a painting and illustration tool, and the first CTP version of Expression Interactive Designer, which can help designers and developers build 3-D animation and graphics, are available for download from Microsoft's Web site.

Jered Cuenco is a Portland, Ore.-based multimedia developer at Avenue A/Razorfish, an interactive marketing and technology services unit of Seattle-based aQuantive Inc. He said that although the beta releases of Expression are rough, the tools offer some promise.

"Interactive Designer is clearly still in its infancy," said Cuenco, noting kinks in its workflow and complexity that make it difficult to learn. "Do I think that Interactive Designer is the killer of Macromedia Flash? No. Do I think that it is a direct competitor? Only somewhat."

The suite, which also includes Expression Web Designer, can be used by developers to transform graphics into Extensible Application Markup Language (XAML) code for creating dynamic applications, according to Microsoft.

> **Do I think that Interactive Designer is the killer of Macromedia Flash? No. Do I think that it is a direct competitor? Only somewhat.**
>
> **JERED CUENCO,** DEVELOPER, AVENUE A/RAZORFISH

That capability should speed up workflow between designers and developers and eliminate the need for designers to use separate applications such as Macromedia Inc.'s Fireworks or Adobe Systems Inc.'s Photoshop, said Scott Stanfield, CEO of Vertigo Software Inc., a software developer in Richmond, Calif.

### Product Features

The Expression suite is part of the Windows Presentation Foundation (WPF), a framework for creating user interfaces for desktop and Web applications running on the next-generation Windows Vista operating system. WPF is part of WinFX, an object-oriented, managed application programming interface for building Windows applications that can run on Vista.

Vista is due for release by the end of this year.

Scott Golightly, a consultant at Keane Inc., a Boston-based services firm, said that using Expression to easily import graphics and objects created by designers into XAML code will likely lead to improved user interfaces.

"If designers and developers both start using Expression and XAML, we might see a lot fewer applications that look like they were designed by developers," he said.

Microsoft will likely release a CTP version of Expression Web Designer during its professional Web developers conference in March, according to a source.

Forest Key, director of product management at Microsoft, declined to disclose a final release date for the Expression suite. ▸

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# U.K. Agency Hopes Integration Tools Boost Quality of Health Data

## Pilot project aims to improve analysis and delivery of cancer treatment

BY HEATHER HAVENSTEIN

THE U.K.'S National Health Service (NHS) Cancer Registry, which monitors the health of cancer patients from diagnosis through treatment, is testing new integration tools that it hopes will boost the quality and availability of patient data.

In November, two of the country's eight regional cancer registries began a pilot program using tools from InterSystems Corp. in Cambridge, Mass., to integrate, validate and manage information from hundreds of data sources.

The test is scheduled to be completed in three months. If the testing goes well, the technology will be used agencywide as part of an effort to assess the outcomes of cancer treatments, study the effects of environmental and social factors on cancer risk, and evaluate cancer prevention and screening programs.

The regional Merseyside and Cheshire Registry and the Thames Cancer Registry are testing the InterSystems Ensemble tool suite, which includes an integration server, an application server, an object database and a unified development and management environment, said Chris Carrigan, the U.K.'s national coordinator for cancer registration.

### Multiple Data Sources

The regional operations want the tools to automatically link data feeds from multiple sources to their registries and to the NHS centralized registry. Automating the feeds would decrease the need for manual input and thus significantly improve the quality of the data, Carrigan said. "The number of sources of data from which we would need to [create a patient history] could be hundreds," he said. "It is virtually impossible to do high-quality, high-volume cancer registrations by hand."

Replacing manual processes will also help keep the registries more up to date, Carrigan said. There is currently an 18-month lag between the time a patient's cancer treatment begins and when information about it becomes available in the registry, he said.

Using the integration technology, "every data record that comes in electronically to the [regional] data registry will be automatically linked to NHS to check and authenticate who the person is and to augment other data in the registry," Carrigan said.

The NHS also expects that an Ensemble-based system will allow health officials to apply standardized business rules to the categorization of data. The current process, based on human decision-making, can lead to discrepancies in how data is categorized and analyzed.

"I can never tell whether it is a right or wrong decision, because [the data is analyzed] in someone's head," Carrigan said. "With the [new] system, I can control and visualize the business rules that are happening within the registries."

The pilot project is expected to allow registries to more easily support the influx of data expected as the country rolls out the NHS National Program for IT, which will create a single electronic record of care for all U.K. citizens. That program could result in a 100% increase in health care data over the next several years, Carrigan said.

Scott Tiazkun, an analyst at IDC, said the challenges of the new U.K. system mirror the massive integration requirements for the U.S. national health information network proposed by the Bush administration. That system is intended to allow health care providers easily share patient data.

> **With the [new] system, I can control and visualize the business rules that are happening within the registries.**
>
> CHRIS CARRIGAN, U.K. NATIONAL COORDINATOR FOR CANCER REGISTRATION

"The technology around middleware and tools that will be able to provide the links between all these disparate data sources will be crucial in making local databases be able to talk to regional databases," Tiazkun said. ▸

# IBM Exec Sees Open-source Boom in 2006

BY ERIC LAI

**Bob Sutor**, *IBM's vice president of standards and open-source, expects a number of industries to embrace open-source software in 2006 — and he expects IBM to play a role in many of those efforts. In an interview with* Computerworld *last week, Sutor also weighed in on the state of Linux and on Massachusetts' plans to use the XML-based OpenDocument file format.*

**What industries do you expect will embrace open-source this year?** There will be a continuation in health care and education. I think financial services will have a big year. They're always looking for efficiencies and greater economies of scale. Retail is another area, as we see a lot of standardization work going on there.

We're also starting to see more open-source projects that are specific to a particular industry. The Sakai project in education is a good example. It is basically an ERP system for universities. Instead of managing customers, it manages students and courses and allows information-sharing between colleges and universities.

**Why hasn't Linux, with its strengths as a thin-client system, had better success in the retail point-of-sale business?** I think as retailers get more creative and start building these "stores of the future," they are going to look for Linux. The price is right, the ability to code on them is right. I wouldn't ask, "How do we get more Linux in retail?" It's, "How do we get it thoroughly open-source and standards-based so there's a level playing field?" That way you can see where open-source makes sense and where proprietary products make sense.

On the Linux server side, we've done some interesting things in stores. There's an RFID project with German retailer Metro AG and SAP AG. Linux servers monitor what's happening on the shelves, like when items are taken off and brought to the register.

**What's your prognosis for Linux on the client, especially now that virtualization technologies look to give it a boost?** Open Source Development Labs late last year had a meeting to really start to figure out how to converge some of the technologies on the client. Progress is being made, and OSDL has really taken a leadership position on this.

**Do you still hold out hope that we'll someday see an open-source Java?** I think the way things are going on Apache, we're getting there little by little. We said what we said two years ago because we wanted to get the issues out there and have Sun respond. In different ways, they have responded.

**Are you disappointed that Massachusetts may not fully implement OpenDocument?** You've read some headlines that are incorrect. The state is firmly committed to moving forward with its OpenDocument plans on Jan. 1, 2007. Microsoft made some moves at the end of last year. The state said basically, "We'll look at them as they come along." As the situation changes, if Microsoft commits to doing everything that they need to — and I would argue that they have not done everything that they need to do — then the state will look at what they do like anything else.

**But isn't Microsoft starting to make inroads against OpenDocument?** The reference model that was put in place [by the ECMA standards group] last September, and is still in effect, is only OpenDoc. Microsoft has given their formats to ECMA and basically told ECMA, "Here they are. Don't change them, but please call them 'community and open,' even though we're the only ones allowed to do anything with them." All Massachusetts has said is, "Yes, you've done something; we'll look at it next time it comes around to see if it meets our requirements. If it doesn't meet our requirements, well, then it's still out." Don't fall into the trap that something that may happen in the future means that OpenDoc is out. There's a lot of work to be done in terms of Microsoft formats, ECMA formats, before they become a standard. ▸

# EMC Adds Google Desktop Search to Documentum

## Enables searches of multiple sites with one query

BY LUCAS MEARIAN

EMC Corp. earlier this month added the Google Desktop for Enterprise tool to the single-query search function in its Documentum Enterprise Content Integration Services search offering.

Linklaters, a London-based law firm with 30 offices in 22 countries and more than 2,000 lawyers, said it expects that the upgrade will let it search for legal data on multiple systems through a single query.

Linklaters has been storing legal documents and project data in EMC's Documentum content management system for several years, but it must also retrieve information from legacy, library and categorization systems, as well as Web documents stored on desktops.

The law firm hopes that internal tests of the Google Desktop upgrade will show that it won't have to undertake separate searches of those systems, said Tony Bland, an information systems strategy manager at Linklaters.

### Googling the Desktop

Hopkinton, Mass.-based EMC said the Google function is now available as an add-on with the current Documentum Version 5.3 software. The tool will be integrated in Version 5.4, which is slated to ship later this year, according to EMC.

The Google tool allows users to access unstructured content stored on desktops, including documents, Web pages, XML, and audio and video files, said Lubor Ptacek, director of product marketing for EMC's software group.

The Google Desktop feature can query data that has been created inside or outside a company and resides on file servers, databases or even online services like Bloomberg News, Ptacek noted.

The Google search engine provides adapters to translate the different languages of various content sources. It then compiles the information from multiple sources into a single view, the company said.

"This completes our strategy when it comes to Google search sources," Ptacek said. EMC had earlier added support for the Google Web site search and the Google Search Appliance products to its Documentum system.

Ptacek said EMC is targeting call center employees with the new function. "That person is responding to calls and needs to quickly come back with the right document that has the right answer," he said.

Sue Feldman, an analyst at IDC in Framingham, Mass., said EMC's decision to add the Google interface is a recognition that end users want it as part of their companies' overall content management systems.

Documentum also supports the search-engine interface from Oslo-based Fast Search & Transfer ASA, she noted.

"So many people really prefer the Google interface to something that's more complex," Feldman said.

**NEW FEATURES**

### Documentum's Google Face

- The Google Desktop search interface is now available for Documentum ECI Services.
- The Google engine can gather content created within and outside a company.
- Google provides a single point of access for searching multiple systems.
- Google Desktop for Enterprise will be available for ECI Services by March.

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DON TENNANT

# Outrageous Outrage

IT WOULD BE INTERESTING to know how many Google searches were made last week for news about Google searches. Of course, you hardly needed Google to find it. It was everywhere. Even on the other side of the planet.

When the news broke that Google is launching a search service in China that will block any results the Chinese government deems unsuitable for its citizens, the outrage seethed on countless Web sites, including our own. "Boycott Google Now" screams the headline of an opinion piece by Dan Verton, a former *Computerworld* security reporter and a well-known author on security matters. True, Google is only doing what Microsoft and Yahoo have long done in China, Verton acknowledges. But, he says, Google deserves to be singled out because it's the "one company that could have made a difference in the lives of 100 million Chinese citizens by standing up and speaking out against online repression." Instead, it has "solidified the position of U.S. online search giants as firewalls to freedom."

**DON TENNANT** is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

Many in the U.S. will cheer that rhetoric, completely oblivious to its tragic shortsightedness. They'll echo the outcry without recognizing that we simply can't be content with changing the lives of the 100 million Chinese who have the incalculable good fortune of gaining access to the Internet. They'll be incapable of appreciating the fact that we need to change the lives of 1.3 billion Chinese. And the best way to make that happen is to engage China and to expose the Chinese people to whatever positive Western influences we possibly can. We don't need to agree with that nation's government to abide by its laws, any more than we need to agree with our own government to obey it.

And that's where last week's Google news gets disturbing. In defending the company's decision to launch the censored service in China, Andrew McLaughlin, Google's senior policy counsel, made this statement: "While removing search results is inconsistent with Google's mission, providing no information — or a heavily degraded user experience that amounts to no information — is more inconsistent with our mission."

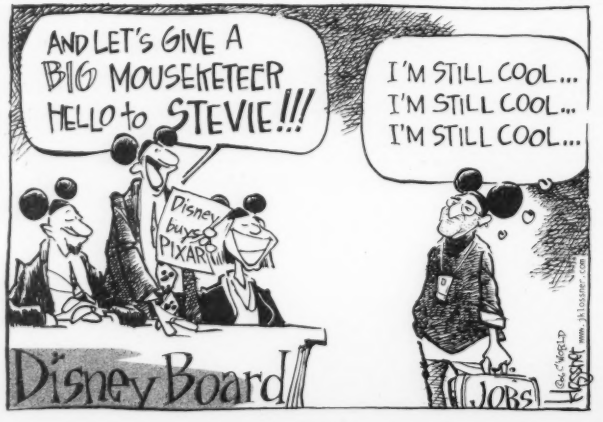
However, Google's problem with inconsistency certainly isn't evidenced by its responses to search-data positions taken by the Chinese and U.S. governments. Whereas Google has acknowledged the Chinese government's right to block search results, it refuses to acknowledge the legitimacy of the U.S. government's subpoena for information about search results. That refusal has unleashed yet more outrage, this time over suspicions that the government is out to identify Internet users searching for porn.

That's just nonsense. The government just wants a random sample of 1 million Web sites in Google's search-engine index and a list of all search queries made during a specific week. It's seeking the data to fight a challenge to the Child Online Protection Act. It has nothing to do with personally identifiable information, and even Google, when pressed, acknowledges that it's not a privacy issue.

Yet Google is capitalizing on the privacy hysteria in order to avoid setting the precedent of releasing internal information to the government. In doing so, it has put Microsoft, AOL and Yahoo — all of which did the right thing by complying with the government's subpoena — in the awkward and unfair position of having to defend themselves against unwarranted accusations of privacy breaches. If anyone should be bent out of shape, it's them.

The outrage stemming from last week's Google news was misplaced. That, in the end, is what's truly outrageous.

Don Tennant




V.P. KOCHIKAR

# Re-engineer Your Crystal Ball

INNOVATION HAS been a marvel of modern human endeavor, but our ability to foresee technological innovation has been less marvelous. When confronted with a problem, we fail to correctly assess its potential size and impact. When there's a need to foresee the potency of a technological solution to a problem, we are routinely found wanting.

This technology foresight deficit follows one of two patterns. The first is one of exaggerated response. In this pattern, which we may call the Extreme Tendency, both the problems and the technologies to address them are accorded a status more extreme than is warranted. When a problem looms, its consequences are overstated — often grossly. Some impending disasters that never were: grain shortages escalating to global famine proportions, the Y2k bug causing airplanes to crash, and computer viruses laying waste vast tracts of the information landscape.

The same Extreme Tendency pattern plays out when a technology arises to solve a problem, with many of us seeing it as a panacea: Internet-based companies supplanting every consumer need, third-generation technologies revolutionizing telecommunications, and automated tools virtually replacing humans in software development.

The second pattern of foresight breakdown is one of understated response, or what may be labeled the Quiescent Tendency. Problems are underrecognized to the point of being considered unworthy of the effort of finding a solution. An example is the problem of voice communication over distance. An early telephone was invented by Elisha Gray, but he delayed filing for a patent for two years, largely because he didn't think it addressed any major need. Even Alexander Graham Bell failed to fully grasp his telephone's potential, initially thinking of it as little more than a novelty.

Similarly, new technologies are often underrated or not considered "good enough" for the problem at

hand. Frank Whittle, who invented the turbojet in the 1930s, was given the cold shoulder by his employer, the Royal Air Force — and his patent even expired for want of the £5 renewal fee. AT&T in 1984 decided not to invest in cellular telephony, believing that the market wouldn't support more than a million cellular handsets by 2000. E-mail was steadfastly ignored by the corporate world for a decade.

It is possible to recognize when we are falling into either of the above patterns of erroneous foresight and extricate ourselves. CEOs, chief technology officers and CIOs seeking to gauge the business relevance of emerging technologies can follow these simple pointers:

**V.P. KOCHIKAR** is an associate vice president at Infosys Technologies, where he focuses on strategic foresight, technology risk management and intellectual capital management. The views expressed here are his own, not his employer's. He can be contacted at **kochikvp@infosys.com.**

## Follow the Buzz, But Don't Swallow It Whole

Symptoms of the Extreme Tendency pattern are relatively easy to recognize — the accompanying clamor and hyperbole are unmistakable.

When the tumult surrounding a problem or solution makes your antennae tingle, first *ask lots of deflating questions.* Did the problem exist five, 10 or 20 years ago? What are the three most compelling ways in which a new technology is superior? Who has invested, and how much? How open is the proposed technology? Is a legacy integration path visible?

Next, *question assumptions.* Is there an assumption that the entire addressable population suffers from this problem, when in fact only a subset does? Are we falsely extrapolating from past experience? The past can be a guide, but only if we factor in technological and regulatory advances that have occurred in the meantime.

Third, before accepting the inevitability of the problem, *allow that people will act in ways to counter the projections.* The hubbub itself will force redoubled efforts at resolution. This is what happened with Y2k.

When the world is atwitter about a new technology, *check whether vendors have the capacity to deliver.* Are they savvy about the risks — as well as "softer" aspects, such as change management? Importantly, *continue to look at "superseded" technologies.* It is a common fallacy — encouraged by technology vendors — to think that new technology completely junks the old way of doing things. Mainframe computers continue to defy rumors of their impending demise (see "Morphing the Mainframe," page 29).

## Seeing Below the Radar

The second pattern, the Quiescent Tendency, is more difficult to recognize and correct. Underrecognized problems, by definition, rarely appear in public discourse. One trick is to *avoid getting blinded by the current technology being "good enough."* Ask, "Are we listening to existing customers?" and "Do we know what additional features they need?"

Likewise, "discovering" technologies that are currently going unnoticed, although difficult, can be easier if you follow some simple pointers:

- See what *users who are less sophisticated* (or less well-heeled) than you are buying. PCs were initially used by smaller companies that couldn't afford mainframes. Likewise, micropayment technology may grow up to find wider corporate use.
- See which technologies *academics and researchers* are using. They were using e-mail, the Internet and open-source long before the corporate world noticed. Today, grid computing is beginning to cross over into business.
- See what technologies *your employees* are using at leisure. PDAs and blogging bubbled up this way.
- See what *junior-most employees* are using. Instant messaging's early adopters were young adults. Podcasting, and the iPod itself, may find eventual business use — there are already uses in corporate learning.
- Look at *niche technologies.* RFID had early uses in retailing and transportation. The telecommunications industry was an early user of object technology for software. Speech-recognition technology was initially used for persons with disabilities.
- Follow *proven early adopters* in your industry segment. Electronic auctions and prediction markets are in the early stages of corporate adoption.
- And, yes, see what technologies *kids* are using. Gaming is beginning to be used in business — for training, design by simulation, strategy formation and forecasting. Also, let's not forget that the first "telephone" was probably two cans connected with a taut piece of string.

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# READERS' LETTERS

## Editor's H-1B, Linux 'Predictions' Draw Fire

**IN HIS** editor's note introducing *Computerworld*'s Forecast issue on Jan. 2 ["Not Happenin' "], Don Tennant wrote, "Too many voters are convinced it's unfair to have to compete for jobs with people who work harder than we do." I'm not entirely against the H-1B program, but the issue really is cost. I'd have a lot more respect for Tennant's support of H-1B expansion if he'd drop all pretenses that this is about who works harder.

Suggesting that the rationale is hard work is like someone saying he buys *Playboy* just for the articles.

**Peter Soucy**
*Application developer, Minneapolis*

**USING TENNANT'S** argument, an H-1B visa worker would be more capable than he of presenting an editor's note in a major IT publication. He would be representing all of those working the hardest to develop this country's technological capabilities, and so would be best suited to comment.

**Michael W Fontana**
*Senior database administrator, NTT/Verio, Dallas, mfontana@verio.net*

**I LIKED ALL** of Tennant's predictions but the last one: "The number of Linux aficionados will not increase in 2006. In fact, their numbers will diminish as Linux loonies worldwide throw themselves off cliffs and in front of trains after seeing Bill Gates on *Time* magazine's Dec. 26 'Persons of the Year' cover."

Linux isn't dead and eventually will overtake Microsoft simply because it is far cheaper to use. Microsoft licensing fees are becoming more expensive than the hardware we are buying these days. As those fees become the No. 1 cost in IT besides staff, CIOs everywhere are going to take a hard look at options.

**John E. Columbus**
*Owner, Columbus Consulting Group, New Hope, Minn., Detanyek@hotmail.com*

**NONSENSE.** We Linux loonies would never assault the environment or interfere with mass transit in such a cavalier fashion. Besides, since *Time* has in the past featured such wonderful people of the year as Ayatollah Khomeini, G.W. Bush, Richard Nixon, Nikita Khrushchev, Mohammed Mossadegh and Joseph Stalin, Bill Gates fits right in.

All kidding aside, though, at least he does a lot of good with his billions through the Bill and Melinda Gates Foundation; that's more than any of those other people ever did.

**Rich Tietjens**
*IT technician, Tualatin, Ore.*

## Start Grooming Post-Boomer Leaders Now

**WHAT PAUL GLEN** is talking about in his column about the aging of the baby boomers is a succession plan ["It's Time to Invest in Leadership," Dec. 19].

I saw something today that says that at least 85% of companies either do succession planning very badly or not at all. However, a succession plan is important to make sure the right people are given the right experiences.

At 3M, where I used to work, we believed that the preparation of a new leader takes between two and six years, depending on the current set of skills an individual has, which experiences are needed for the job, how quickly an individual learns and a few other variables.

So, yes, a management team has to go into it for the long haul.

Actually, the leadership gap is already here. The first wave of the baby boomers are hitting 60, and time is growing short. The investment in the future should already be under way.

For those of you who haven't started, do it tomorrow.

**David J. Putrich**
*Owner, Lindenwood Consulting LLC, Bloomington, Minn.*

**COMPUTERWORLD** welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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### Catching the Flu

The U.S. lacks the IT resources that would be needed to fight an avian flu pandemic. Creating a map of outbreaks like this one requires manual input, and national and regional systems aren't fully integrated. **PAGE 32**

**SECURITY MANAGER'S JOURNAL**

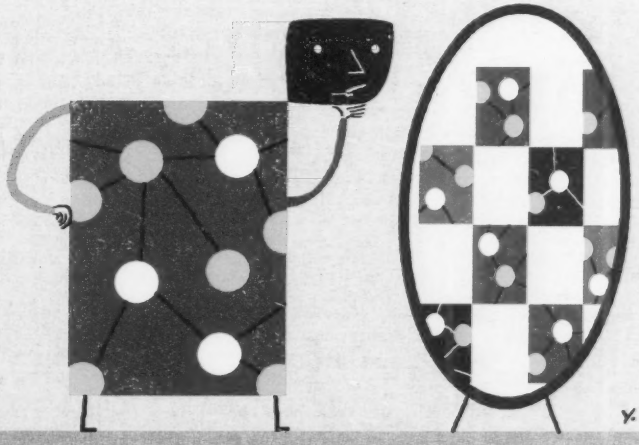
### I'll Make Do With My Not-So-Virtual World

C.J. Kelly questions whether a colleague's virtualization program will produce real benefits or simply generate more security headaches. **PAGE 34**

**QUICKSTUDY**

### Rootkits

These hacker tool kits hide themselves and their malicious payloads and are difficult to detect and remove. Here's how they work their black magic — and how to protect yourself. **PAGE 36**



# Morphing the Mainframe

**As distributed systems take on more mainframelike qualities, the future of big iron hinges on its ability to adapt to the distributed computing revolution without being consumed by it. By Robert L. Mitchell**

JAMES YANG

AT BANK OF NEW YORK, the mainframe is still king. Nearly three quarters of all transactions are processed on big iron, and 20% to 25% of the remaining transactions rely on the mainframe for at least some business processes.

"The mainframe today is still the platform that we are able to drive to the highest level of utilization," says Edward Mulligan, managing director of the technology services division at Bank of New York Co.

That's slowly changing. Like many companies, the bank conducts most software development projects on Windows or Unix servers. These distributed systems are more open, offer more-agile software architectures and are less costly to run and maintain than mainframes, Mulligan says. And distributed systems are increasingly offering traditional mainframe benefits, such as availability, scalability and server utilization. Mainframe technologies, ranging from channel architectures to virtualization, have migrated down to distributed systems and have begun to mature. "Most of the server solutions available today are morphing to become more like a mainframe," Mulligan says.

**10%**

**Projected annual growth** in mainframe MIPS through 2010

**5%**

**Projected annual decline** in the total number of mainframes through 2010

But the mainframe is also becoming more like distributed systems. Designs are evolving to incorporate technologies such as Fibre Channel, InfiniBand, Unix and Java. The success of those efforts will determine whether the mainframe will survive as a distinct platform or simply be absorbed into the world of distributed computing.

Robert DiAngelo, vice president and CIO at MIB Group Inc., says he doesn't trust distributed systems with his high-

end applications for insurance fraud detection. "I'm in an environment that's easy to maintain, very secure, highly reliable," he says of his IBM z890 midrange system.

DiAngelo is redeploying his applications in a three-tier architecture that includes Java, WebSphere and DB2. But the entire architecture, plus his development and quality-assurance testing environments, are consolidated into a single logical partition on the mainframe. Everything fits into a cabinet in his data center.

"This is a lot easier to manage than 80, 90 or 200 servers that are spread out," says DiAngelo. MIB Group is a poster child for IBM's strategy of promoting the mainframe as a consolidation platform, although DiAngelo acknowledges that he's "out in front" of most organizations in taking this approach.

> **The mainframe today is still the platform that we are able to drive to the highest level of utilization.**
>
> **EDWARD MULLIGAN,** MANAGING DIRECTOR, TECHNOLOGY SERVICES DIVISION, BANK OF NEW YORK

> **IBM mainframes are going to become marginalized to the high end if IBM can't significantly reduce the cost.**
>
> **DALE VECCHIO,** ANALYST, GARTNER INC.

As mainframe technologies trickle down to distributed systems, those systems are getting better at hosting mainframe-class applications. Meanwhile, IBM, Unisys Corp. and others are moving to more open, industry-standard technologies.

Distributed systems based on Unix and Windows are eroding the low end of the mainframe installed base. The mainframe still firmly holds its edge in complex environments. But the battle for the midrange — applications of up to 1,000 MIPS, where the majority of mainframe applications fall — has already begun.

Unless the relatively high costs of mainframe hardware and software become more competitive, and unless more-agile software architectures, such as .Net and J2EE, can be successfully deployed on mainframe systems at scale, the mainframe could eventually be eased out of corporate IT. "IBM mainframes are going to become marginalized to the high end if IBM can't significantly reduce the cost," says Dale Vecchio, an analyst at Gartner Inc.

Adoption of industry-standard technologies is key to the mainframe's survival. IBM has based its strategy on Java, WebSphere and Unix/Linux and positioned the zSeries mainframe as a consolidation platform. IBM also released last July its System z9, which reflects an investment of more than $1 billion and includes innovations such as an encryption processor and the ability to support up to 54 processors and 60 logical partitions.

"That's an enormously impressive technology. They doubled everything except the price," says Gary Barnett, an analyst at Ovum Ltd. in London.

While mainframes are incorporating additional open architectures, they're also likely to continue to be technology leaders, says Chander Khanna, vice president and general manager at Blue Bell, Pa.-based Unisys. "They are at the top of the waterfall. I don't foresee that changing," he says.

At the hardware level, distributed systems have incorporated industry-standard versions of technologies with mainframe roots, such as Fibre Channel, InfiniBand and IBM's Chipkill error-correction technology, which is used in memory for high-availability systems.

"Every big server now has dynamic partitioning, a channel architecture — things like InfiniBand — and they all have 64-bit support and large memory," says John Abbott, an analyst at The 451 Group in New York.

## Mainframe MIPS: The Big Get Bigger

While the total amount of mainframe MIPS continues to grow, the percentage used in sub-1,000 MIPS applications is likely to decrease. In absolute numbers, the number of mainframes in use will also decline by one-third. Mainframe shipments in total MIPS will grow 15% per year but will ship fewer, bigger mainframes.

**Distribution of deployed mainframes by size in MIPS:**

| MIPS | 2005 | 2010 |
|---|---|---|
| >4,000 | 3% | 5% |
| 1,001-4,000 | 8% | 13% |
| 501-1,000 | 26% | 31% |
| 101-500 | 30% | 28% |
| <100 | 34% | 23% |

SOURCE: OVUM LTD., OCTOBER 2005

While IBM says proprietary channel architectures such as Ficon and Escon have advantages, Bank of New York's Mulligan would rather have standardized I/O. "An imaging application we have and a storage device we'd like to leverage are not supported cleanly by IBM's Ficon architecture," he says. "You end up buying these esoteric boxes that emulate the protocols."

But for MIB Group's I/O-intensive application, channel performance is more important than using open-standards hardware. Today, InfiniBand can't drive the number of concurrent channels DiAngelo needs. "We need that back-end channel capacity, and that's something the mainframe does very well," he says.

Still, proprietary I/O hardware is costly. "You pay a hell of a lot to get those channels in place," Abbott says. Most mainframe applications would do just as well with InfiniBand and off-the-shelf adapters, he adds.

That's the direction that IBM is moving in, says Guru Rao, an IBM fellow and chief engineer for the eServer line. While the mainframe is the system most capable of handling complex environments, he says, "a high-value system cannot provide only unique technologies. It has to be able to exploit and leverage high-volume capabilities in the industry."

IBM already offers some support for Fibre Channel, and the next-generation mainframe will also support InfiniBand, Rao says. That evolution to support standards-based, commodity hardware architectures is necessary if IBM is to narrow the price gap separating the mainframe and distributed systems.

Mainframe vendors have also struggled with proprietary processor designs, which can't compete on price with high-volume Intel chips. The IBM plug-compatible mainframe market all but disappeared as the costs of keeping up soared.

Bull and Unisys have both thrown their lot in with Intel (although Unisys says it will continue to offer some designs of its own), but IBM is taking a middle road. Its Power architecture is used in gaming systems, and IBM says it plans to leverage the economies of scale generated from those volume products to develop a more competitive, "higher value" version of the Power5 for the mainframe.

"We are going to provide the same benefit to the mainframe . . . as we have for the iSeries," Rao says. The zSeries processor will include "elements of the Power5 architecture," but the chip set will remain unique, he adds.

IBM's efforts are bringing costs down by about 20% per year, says Abbott. However, the price/performance improvements for x86-based systems have been in the 30% to 45% range, he says.

The emergence of virtualization technology on the x86 and Itanium architectures and the evolution of tools such as VMware are increasing utiliza-

# The Mainframe Mind-set

**The mainframe's legendary reliability and availability** can't be attributed solely to state-of-the-art technologies. It's a cultural mind-set that grew up around the data center, says Robert DiAngelo, CIO at MIB Group. "The disciplines needed to manage data processing are very well defined and controlled," he says. Alan Walker, vice president at Sabre Holdings Corp. in Southlake, Texas, agrees. "We've spent years building a culture around [the mainframe]," he says.

In contrast, the culture around distributed systems, which grew up from departmental computing initiatives within individual business units, has been much less disciplined. Modernization efforts that don't take culture into account are destined to fail. "Some of the biggest failures in IT history have been associated with package migration. You must change the culture, not just the software," says Gartner analyst Dale Vecchio.

Sabre had to address that before rewriting its fare-search application and migrating it to an open-systems environment. "When you deal with tens of thousands of transactions per second, you can't reboot," Walker says. A staff that manages open systems doesn't always understand the best practices required to maintain that kind of uptime.

A successful migration to open systems can't happen unless those mainframe values migrate as well, Walker says. "Outages aren't caused by the operating system or hardware," he says. They're produced when the programmer or operations staff does something wrong. "Open-systems [staff] may run a little looser," but veteran mainframe programmers and staff have been indoctrinated not to make those errors, Walker adds.

The key is to infuse that culture into the entire staff. That starts by bringing the open-systems staff into the mainframe world – literally. "I'm taking my guys up there, doing bonding with the veteran mainframe guys," Walker says.

DiAngelo's mainframe staffers are also learning Java and doing the migration on the mainframe.

Robert Rosen, president of the IBM mainframe user group Share, sees a trend of organizations hiring experienced mainframe staffers to run distributed data centers. "They realize that they need that kind of discipline," he says.

– ROBERT L. MITCHELL

tion levels for distributed systems, but they still fall short of the mainframe's capabilities. "To be realistic, we still have a ways to go before [distributed systems] can achieve the complete richness that the mainframe environment offers," says Barnett. But the gradual maturation of nonmainframe virtualization technology could eventually make it possible to migrate larger workloads of 1,000 MIPS and higher off the mainframe, he says.

"Virtualization is the key for bringing the mainframe and open-systems technologies together," says The 451 Group's Abbott.

IBM offers its Virtualization Engine, which Rao says will increasingly be used to optimize resources across systems. "In our view, the way to deal with customers' complexity is to use a virtualization engine that will run not only on IBM platforms but also on other leading platforms," he says.

Another type of virtualization — hardware emulation — is also making it easier to move mainframe application environments by abstracting them from the underlying hardware.

> **Most of the server solutions available today are morphing to become more like a mainframe.**
>
> **EDWARD MULLIGAN,** BANK OF NEW YORK CO.

Paris-based Bull offers virtualization that enables its GCOS 8 mainframe operating system and the applications on top of it to run unchanged on its Intel-based NovaScale 9000 hardware, says Joe Alexander, Bull's director of strategy and planning. For now, however, high-end customers will have to wait for faster chip sets and performance improvements to the emulation software.

Similar technology for z/OS and OS/360 is available from Platform Solutions Inc. in Sunnyvale, Calif. The Fujitsu Ltd. spin-off sells a system that, when used with the vendor's virtual I/O subsystem, can support z/OS, as well as Linux, Unix and Windows partitions, on one x86-based system.

"We bring the characteristics of the mainframe and the execution of the operating system to commodity hardware," says Michael Maulick, president and CEO of Platform Solutions.

As a method of balancing workloads, IBM's approach with Virtualization Engine sounds a lot like grid computing — an activity that's largely being driven in the open-systems arena today. "Even if IBM has an edge, it's not going to last with so much activity going on elsewhere," Abbott predicts.

The bottom line is that the hardware platform is becoming less and less relevant, says Unisys' Khanna. "It's more of what's in the operating environment and what's in the middleware," he says.

Mainframe operating systems, while proprietary, still have some key advantages in several areas. "The operating system provides the efficiency, isolation, the address spaces, the encryption, and supports an efficient clustering model," says Rao. The mainframe operating system is also the most trusted platform for doing key management, he says.

Buffer overflows on z/OS are unheard of, says MIB Group's DiAngelo, adding that "it's a hell of a lot easier to secure one box."

But the biggest issue remains what to do with the more than 40 years of mainframe code — much of it tightly woven into the mainframe operating system and hardware architecture — that needs to play in a world of distributed computing and Web services.

Mainframe users are sitting on more than a trillion dollars' worth of legacy mainframe code, says Rao. Bank of New York, says Mulligan, is "dealing with tens of millions of lines of code." And that amount of code couldn't be ported in his lifetime, he says.

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# Catching the Flu

**IT is lagging in the effort to provide useful information to fight a potential avian flu pandemic, hobbled by hodgepodge of systems and inadequate automation. By Marc L. Songini**

IT IS IN A DEADLY RACE with the avian flu, which first appeared in China and Southeast Asia and has now reached as far west as Turkey. The use of IT for tracking and potentially defeating a pandemic is being hampered by a lack of best practices, a need for more comprehensive state-of-the-art systems and the absence of a system to share data consistently from the actual sites of outbreaks, according to experts at the Centers for Disease Control and elsewhere.

In North America, agencies at the state, local and federal levels use a wide variety of systems of differing degrees of sophistication to track influenza and share basic data among public health officials. Some of these are homegrown; others are "syndromic surveillance" applications — dedicated systems created by third parties that track epidemics and help trigger a response from relevant agencies. Even with the information that's collected currently, the systems are unable to automatically do the requisite analysis and make the necessary recommendations to mount the most effective and aggressive response to stop a pandemic, say health officials.

There are virtually endless ways to improve the existing surveillance systems, according to Lynette Brammer, epidemiologist for influenza at the Centers for Disease Control in Atlanta, which uses seven different applications to track flu outbreaks. "The majority of our systems have been running for years and years, and some of the technology is definitely not state of the art," she says. The applications primarily feature Microsoft SQL Server database technology on the back end and an Access database management system on the front. The CDC also employs a SAS Institute Inc. database with custom-written scripts to track flu appearances across 122 cities in the U.S.

The databases handle various activities, says Brammer. For instance, one checks to see if a given city is experiencing a spike in mortality rates. If so, staffers can determine whether there are corresponding jumps in outpatient visits or reports of virus outbreaks. The data could also be checked against another system, which would analyze it to determine whether a given vaccine was effective and why. The agency would be able to see where the outbreak occurred and send alerts to doctors so they could recognize patients who are at risk.

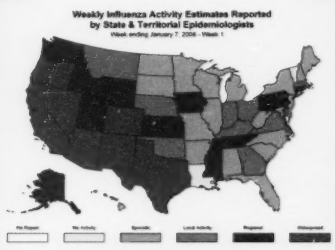
The process of gathering data, which is received by fax or via the Web, tends to be slow and labor-intensive, says Brammer. For instance, one of the ways the CDC gleans its information is from the U.S. Influenza Sentinel Provider Surveillance System. This Web-accessible tool takes feeds from 2,200 volunteer doctors who have collected information from patients exhibiting flulike symptoms. The CDC would like to streamline the collection process, Brammer says. Efforts to establish a way to access hospital data as well are ongoing. The agency also taps into the World Health Organization's FluNet system, a Web-accessible database that lets users query on influenza-related activity by country or region.

Tying together the various systems for rapid analysis could be difficult, because every flu outbreak has a different pattern, Brammer says. Symptoms may be consistent between outbreaks, but geographic patterns aren't, and the peak season is long and variable, running from December through March, she notes. Interpreting the data probably will require some sort of manual intervention.

At regional or municipal levels, there is a hodgepodge of new IT systems arrayed against the flu. New York City may have the most advanced syndromic surveillance system established to date. It was launched in its present form as a response to the 9/11 terrorist attacks, says Dr. Farzad Mostashari, assistant commissioner at the New York City Department of Health and Mental Hygiene. The unit that operates the system oversees a mix of off-the-shelf and custom-written applications that track a variety of statistics through the city, including the daily pharmacy sales, the number and type of ambulance dispatches, and emergency-room visits. The software includes a SQL Server database, a SAS data warehouse and other tools that enable the analysis and visualization of information.

> **"The majority of our systems have been running for years and years, and some of the technology is definitely not state of the art."**
>
> **LYNETTE BRAMMER,** EPIDEMIOLOGIST FOR INFLUENZA, CENTERS FOR DISEASE CONTROL

Mostashari notes that these systems are still "in their infancy," best practices have yet to be determined, and there is no standardization around the software or data formatting. His system receives information mostly via secure FTP with ebXML tags and so far has worked very well. Mostashari believes that overall, the next step for public health IT is to get "closer to the bedside" by accessing electronic medical records right from a doctor's office.


Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists
Week ending January 7, 2006 - Week 1

**Mapping an Outbreak**

**This map of influenza activity was generated by the CDC's U.S. Influenza Sentinel Provider Surveillance System. The collection of regional data that the system depends on still involves manual input, which slows the reporting process. More-automated systems are under development.**

Communications and other high-tech capabilities must also extend to first responders — that is, the health care workers and emergency personnel who would be the first professionals to encounter avian flu face to face, he says.

## International Efforts

The U.S. isn't alone in tracking the flu virus: The Public Health Agency of Canada has established the Global Public Health Intelligence Network (GPHIN), which functions as a secure, Internet-based early-warning system, according to an agency spokeswoman. The Java-based software has a search engine that works around the clock to pick up news reports of any significance to public health. The data is automatically filtered for relevance, analyzed by GPHIN officials and made available via reports and other means to interested parties — including WHO personnel.

But despite efforts like these, the most vulnerable countries of Asia have few if any reliable monitoring systems in place. These blind spots could hamper activities such as making sure enough vaccine is available where it's needed the most.

Given the sophistication of the tools available today, finding ways to comprehensively track a pandemic in North America would be fairly simple, says Michael Stoto, an analyst at the Rand Corp., a research group in Arlington, Va. However, the best way to use the data is another matter. Tracking an outbreak doesn't necessarily demonstrate how the virus is spreading, or over what geographic area. A fully enabled system would help assess and cross-reference each patient, track the length of time spent in the hospital or in quarantine, and give an end-to-end picture of the operations of the pandemic over wide regions.

"There are a whole host of things we could be doing to make our public systems more powerful and more efficient using health-care-based IT," says Mostashari.

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# I'll Make Do With My Not-So-Virtual World

**When another state agency talks up its virtualization program, our security manager questions whether she's missed something. By C.J. Kelly**

SECURITY MANAGER'S JOURNAL

AS I LISTENED to the webcast from a sister state agency describing what cool new things it was doing, I couldn't help talking back. "Why do technical people always try to make it sound like they are doing something much bigger and better than anyone else? Why are they bragging about implementing videoconferencing? Most of us have already done that. And what was that about Web services? Do they even know what the term means?"

It didn't seem so, since the alleged Web service was a Web-based security gateway for authenticating other agencies' personnel before letting them access the agency's databases. That's a service you access via the Web, but it's no Web service. The fellow talking was rubbing me the wrong way. I have an aversion to people who spout undefined acronyms and make things sound more complicated than they are, and he was doing both of those things.

Then he said that his agency had "virtualized" its environment and suggested that other agencies look into EMC's VMware. This was too much for me. If I'd been in the meeting, I would have spoken up. I like to work in a collaborative environment, where you ask people to help you understand a problem, not tell them that you've solved it and they should listen up. Chances are, you've probably solved only a small piece of it and you could learn a lot by hearing other people's ideas.

Afterward, I called a couple of colleagues and asked them if they were using virtualization other than disk management and if they had any security concerns around it. None of them was doing much with it. Maybe I don't hang out in the right crowd. What's all the hype about? I wondered.

Virtualization is nothing new, of course. The concept goes back to the '50s and '60s, when IBM led the way with the development of the virtual machine and the virtual machine manager. VMM is software that lets you run several instances of an operating system on a single piece of hardware, with each instance of the operating system located within its own virtual machine along with its companion applications. The VMM controls all interaction between each virtual machine and the hardware (resources, drivers, etc.). You can run a variety of applications on the same server without worrying about incompatibilities or resource conflicts.

Virtualization has been improved upon countless times in the past 50 years. My own experience with it includes managing disk arrays under HP-UX in a "virtual" way, allowing reallocation of disk space on the fly. It was a great boon to systems administration.

> I tried to think of reasons why I might want to use virtualization.

Another concept on the rise today is grid computing, which is basically the ability to "virtualize" the environment so that provisioning, deploying and reallocating such things as bandwidth, storage and CPU cycles can all be done on the fly. It's a fascinating concept, but I don't know anyone who has implemented virtualization to that level.

## Do We Need It?

I tried to think of reasons why I might want to use virtualization. The obvious benefits involve cost savings, since virtualization can maximize the utilization of systems and ease systems administration. For example, the approach that IBM is promoting would give administrators centralized control of desktop PCs. Applications would be delivered via Citrix from blade servers virtualized with VMware. In the case of my agency, though, this sort of effort to move computing power off the desktop seems like a waste, since we have a significant investment in desktop systems.

IBM is promoting this vision with a television commercial in which a systems administrator faints dead away because he is overwhelmed trying to manage a huge server farm. The solution, according to the ad, is to buy IBM blade servers. But how many blades would you need to support several thousand virtual machines? The idea is to save big bucks by trading in your server support personnel costs for sophisticated hardware. But that hardware will cost you big bucks as well, and you still need support personnel.

Of course, my real concerns are security issues. One consideration is that you can run an untrusted application in an isolated sandbox or "jail." That sounds like a good thing to do, but unfortunately, I just can't readily think of an application we should apply that to.

And when I think of disaster recovery, virtualization looks like a loser. When you're running several applications on a single server, you lose several applications when that server goes down. I'd rather run more servers, each one housing its own critical business application, so that when a server fails, I have to restore just one application, not five or six. I've already got the servers, and if I have any money to spend, I'd rather invest it in improved server management tools.

We've invested in Microsoft Windows 2003 servers on Dell hardware, with Windows XP on the desktop. We manage the environment with Active Directory, among other tools. Our network and security monitoring tools are stand-alone applications running on Linux.

We use a layered approach to security that includes router access-control lists; firewalls; intrusion detection; security policies; Active Directory; an aggressive program of weekly patching of servers and desktops; round-the-clock updating of our antivirus, antispam and antispyware controls; and Veritas backup and restore tools. Our environment hums.

We have not had a single incident of a worm or virus attacking our environment in over a year. So, what's the problem? We don't really have one. I got sidetracked after listening to that webcast by the whole idea of virtualization and what it really means. I don't think it means anything to us.

## WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussion in our forum: **computerworld.com/forums**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

## SECURITY LOG

### FBI: Cybercrime Costs $67B a Year

**A 2005 FBI study of 2,066 companies found that 90% had been victims of cybercrime and 64% had experienced financial losses as a result. Worms and viruses caused the most damage. Computer-related crimes cost U.S. businesses $67.2 billion a year, the FBI said, with an average loss of $24,000.**

### Botnet Hacker Pleads Guilty

**A hacker responsible for creating armies of computers to launch Internet-based attacks and selling those "botnets" to spammers and others entered a guilty plea last week to federal criminal charges in Los Angeles, according to a prosecutor at the U.S. attorney's office. Jeanson James Ancheta pleaded guilty in a U.S. District Court to four felony charges and could face five to 25 years in prison, said James Aquilina, an assistant U.S. attorney. Aquilina said that this is the first time in the U.S. that a hacker has been convicted not only for creating and spreading malicious code but also for making money from it, in this case $60,000.**

### Linux Struck by Major KDE Bug

**Linux vendors have warned of a serious security flaw affecting the K Desktop Environment. The heap-based buffer overflow affects kjs, a JavaScript interpreter used by the Konqueror Web browser and other parts of KDE. KDE developers said in an advisory. The KDE Project released a source-code patch, and Linux vendors followed with binary patches. KDE is one of the two main desktop environments for Linux and Unix.**

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# Rootkits

DEFINITION

A **rootkit** is a set of software tools used by an intruder or illegal hacker to break into a computer and obtain root privileges in order to perform unauthorized functions, hide traces of its existence and exploit its systemwide access.

BY RUSSELL KAY

IF AN ILLEGAL hacker wants to do something to your system, such as plant a virus, a Trojan horse program or spyware, he has to gain access to the system's root directory and the unlimited power that goes with that access. Once established as root, the intruder can modify system commands to hide his tracks from the systems administrator and preserve his root access. The easiest way to do this is via a rootkit.

Generally, a hacker obtains normal, user-level access to a computer or network by guessing or stealing a password or exploiting some known vulnerability. Then he finds a way to collect user identities and passwords to other machines on that network while simultaneously erasing all evidence of his activity.

Years ago, the hacker would have done this by exploiting his direct knowledge of and experience with the system and his personal programming skills. Today the job is simplified — the hacker can use one of many available rootkits that pretty much automate the process.

Originally, the term *rootkit* referred to a set of modified and recompiled Unix tools (typically including ps, netstat and passwd) designed to hide any trace of the intruder's presence or existence.

David O'Brien has traced the lineage of rootkits back to the early 1990s, when Solaris and Linux operating systems were the primary targets. Rootkits are no longer limited to Unix-like systems; similar tools are available for other operating systems, including Microsoft Windows.

The name *rootkit* may suggest a set of canned attack scripts for obtaining root access, but this is not really the case. A rootkit may include programs to monitor traffic, create a back door into the system, alter log files and attack other machines on the network.

QUICK STUDY

In almost all cases, a rootkit itself causes no direct damage. Instead, its function is to mask the presence of other types of (usually malicious) software, such as keylogging Trojan horses, viruses or worms. Rootkits do this by hiding or removing traces of log-in records, log entries and related processes.

Some rootkits replace the binary files for system commands with modified versions designed to ignore attacker activity in order to escape detection. For example, on a Unix or Linux system, the rootkit may replace the list files command (ls) with one that ignores files located in specified directories. Or it may replace the ps command, which lists processes running on the system, with a similar command that ignores any processes that the attacker has started.

Programs that log system activities can be similarly modified, so that when the systems administrator checks the logs, everything looks normal despite the fact that the system has been compromised.

## Finding Rootkits, Viruses

Both rootkits and computer viruses modify core software components, inserting code to hide their presence and perform some additional function (what is called the payload). The key difference is that the computer virus attempts to spread itself to other systems, whereas a rootkit generally limits itself to a single system.

The rootkit's payload attempts to maintain the integrity of the rootkit itself — i.e., to ensure that the target system remains compromised.

For example, every time a computer runs one of the rootkit's commands, the rootkit also checks to see that other system commands on that machine are still compromised and reinfects them as necessary. The rest of the payload generally involves back doors, hidden command-line switches or "magic" environment-variable settings that circumvent normal access controls.

A rootkit sitting inside one of your systems is prima facie evidence that your system has been hacked, and it's something you want to know about. One of the rootkit's main goals is to hide its very existence, but you can detect user-mode rootkits, which accomplish their task by replacing binaries, by looking for changes in the size, date and checksums of key system files.

Kernel-mode rootkits are harder to find, because they take advantage of Unix's (or Linux's) ability to load kernel extensions on the fly. These rootkits sit deep inside the operating system, intercepting system calls from legitimate programs and returning only the data the attacker wants you to see.

### HIGHEST RISK

**Libkit** is a particular kind of rootkit that replaces the shared system libraries of an operating system. A libkit is possibly the most dangerous type of rootkit. Its presence means that you can't trust any programs on the system, because they might use the compromised system libraries.

## Lack of Trust

The fundamental problem in detecting rootkits is that you can't trust your operating system. You can't believe what the system tells you when you request a list of running processes or files in a directory.

One way to get around this is to shut down the suspect

*Continued on page 38*

## Sony and the Newest Rootkit

**YOU – OR YOUR TEENAGER – may have a rootkit lurking on a system at your home. Mark Russinovich, chief software architect and co-founder of Austin-based Winternals Software LP, discovered last October that some Sony BMG Music Entertainment CDs use rootkit technology to automatically install digital rights management software on Windows computers. The intent of this kludge was to prevent unauthorized digital copying of the music.**

**Sony, you may recall, has a long and checkered history of implementing copy-protection for CDs that cause trouble for users. (Remember the brief period you had to run a black Magic Marker around the outside of a CD to play it on a PC?)**

**The Sony music CD creates a hidden directory and installs several of its own device drivers; it then reroutes Windows systems calls to its own routines. It intercepts kernel-level application programming interfaces and tries to disguise its presence.**

**There appears to be no way to uninstall the rogue software. Russinovich discovered that traditional methods did not work, and attempting to manually delete the offending files actually disabled his computer's CD drive.**

**According to several sources, the only way to get rid of the copy-protection software is to reformat the hard drive and reinstall Windows.**

**Russinovich posted an article about his findings on his Sysinternals blog (*www.sysinternals.com/blog/*) on Oct. 31. After the news had quickly spread across the Internet, Sony BMG and First 4 Internet Ltd. announced a free 3.5MB software patch that does not uninstall the software but merely removes its cloaking technology.**

***– Russell Kay***

**SITES WITH MORE ON THE SONY ROOTKIT**

- www.sysinternals.com/blog/2005/10/sony-rootkits-and-digital-rights.html
- www.schneier.com/blog/archives/2005/11/sony_secretly_i_1.html
- www.theregister.co.uk/2005/11/01/sony_rootkit_drm/
- www.freedom-to-tinker.com/?p=921

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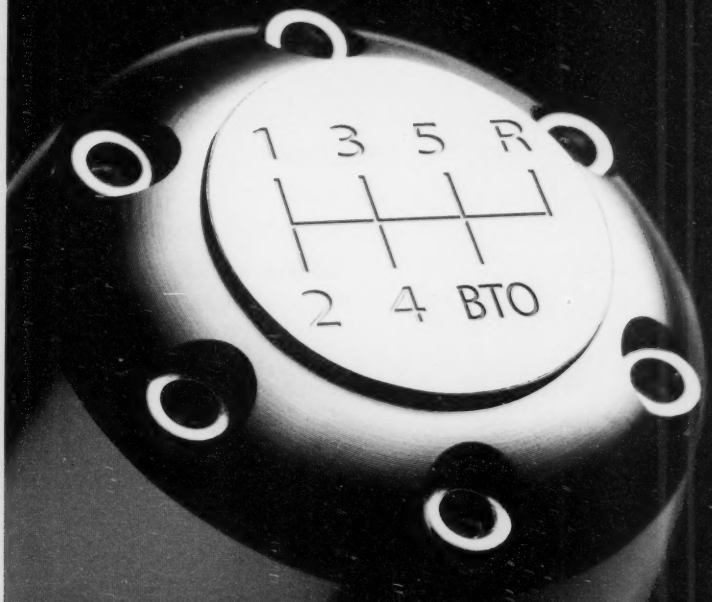


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*Continued from page 36*

computer and check its storage after booting from alternative media that you know are clean, such as a rescue CD-ROM or a dedicated USB flash drive.

A rootkit that isn't running can't hide its presence, and most antivirus programs will find rootkits by comparing standard operating system calls (which are likely to be altered by the rootkit) against lower-level queries, which ought to remain reliable. If the system finds a difference, you have a rootkit infection. (See story below for a list of rootkit detection tools.)

How do you get rid of a rootkit infection? Removing rootkits presents two distinct problems: removal of the rootkit itself, then removal of the payload the rootkit was hiding. Because rootkits change the operating system, you might not be able to remove the rootkit without causing the system (especially a Windows machine) to become unstable.

Russ Cooper, founder of the NTBugtraq mailing list, notes that "only a person with very little knowledge would try to remove a rootkit."

Ultimately, the only safe and foolproof way to handle a rootkit infection is to reformat the hard drive and reinstall the operating system.

*Kay is a* Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

## MORE ONLINE

For additional rootkit resources, visit our Web site: **www.computerworld.com/thisweek**

Are there technologies or issues you'd like to learn about in QuickStudy? Send your ideas to **quickstudy@computerworld.com.**

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## A Simple Rootkit Example

**An important element of a kernel rootkit is its ability to hide itself and cover up what is really going on. Here's one way that some rootkits do that.**

When a rootkit is installed, it replaces certain system calls and utilities with its own, modified versions of those routines.

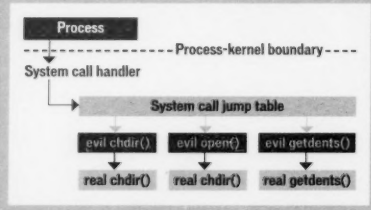
For example, to hide the existence of a file, the rootkit must intercept all system calls that can carry a file name argument, such as open(), chdir() and unlink().

Anytime a call is made to one of these specified system functions, the call is redirected to the modified routine, which checks on the parameters being passed. If the request won't involve or reveal the hidden file, then the "normal" system call is made and results are reported as expected.

However, if the hidden data might be revealed, the rootkit's modified call is used instead so that it can suppress any unwanted output.

If the user or system attempts to manipulate a hidden process, file, network port, etc., then the modified command must report a failure, just as the normal command would if the object did not in fact exist.

These types of kernel changes are relatively easy to detect, because they alter normally unchanging kernel tables to replace the addresses of code segments. Far more sophisticated techniques are available.



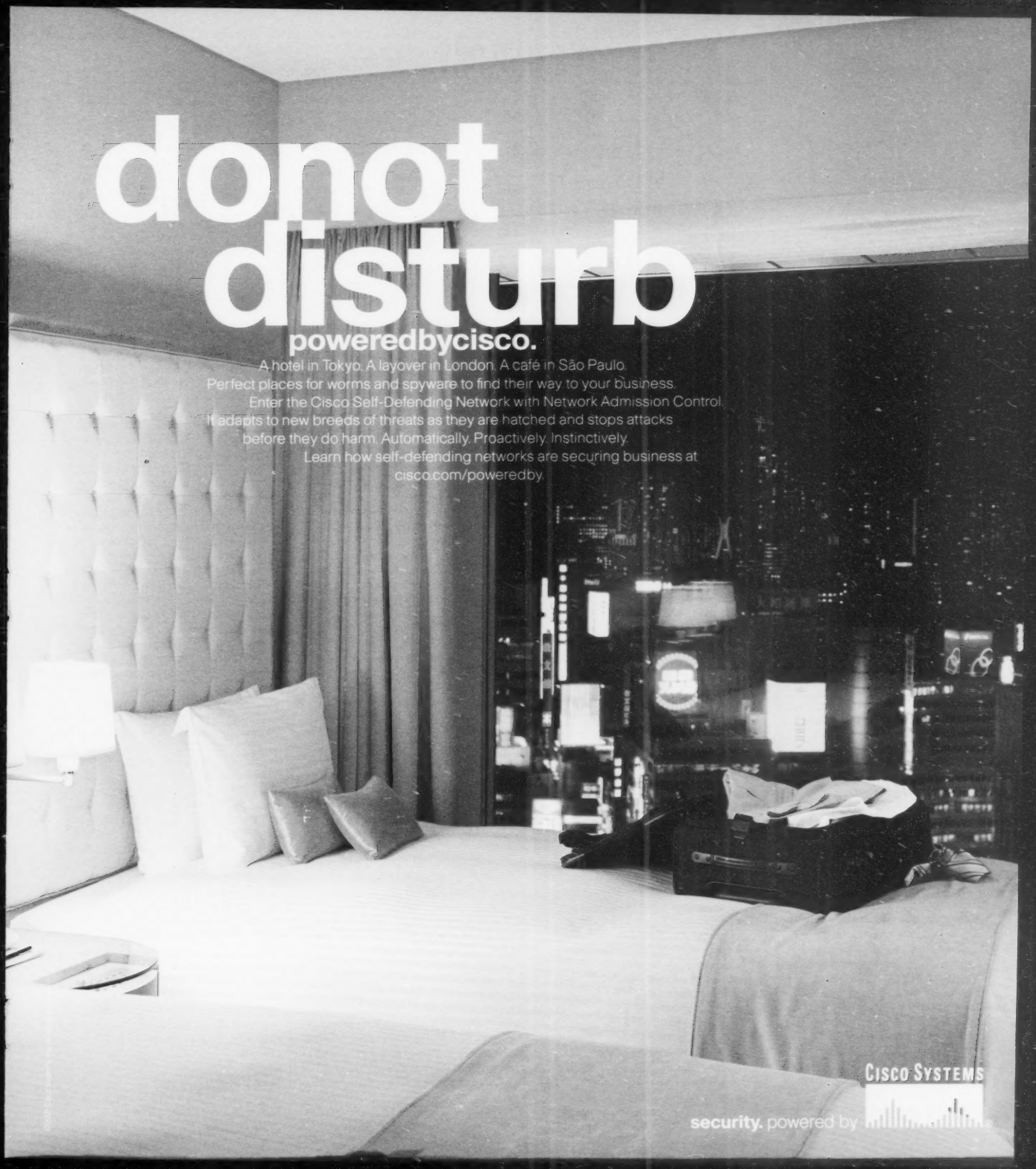

### Rootkit detection products

A number of products now claim to fight rootkit infections, and they may be worth trying. More information about these and several others (including downloads) is available at *www.rootkit.com*.

**BlackLight from F-Secure Corp.**
*www.f-secure.com/blacklight*
■ This is free software that's updated monthly. F-Secure Corp.'s BlackLight examines the system at a deep level to detect objects that are hidden from the user and from security software. The product will detect hidden files, folders and processes but not hidden registry keys. BlackLight requires no installation and scans quickly. It offers to remove detected rootkits by renaming the files involved.

**RootkitRevealer from Sysinternals**
*www.sysinternals.com/Utilities/RootkitRevealer.html*
■ This utility compares user-mode information to kernel mode and reports differences that exist in the Windows Registry and file system. RootkitRevealer will not remove rootkits.

**Malicious Software Removal Tool from Microsoft Corp.**
*www.microsoft.com/security/malwareremove/default.mspx*
■ This tool wasn't originally created as a dedicated rootkit detector; it was designed to find and remove several major virus and worm families. But a number of rootkits have been added to its vocabulary. The program is updated monthly and runs automatically once it's installed.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## BRIEFS

### Smoothstone Unveils Managed Service

■ Smoothstone IP Communications Corp. has announced a managed IP communications service for businesses with up to 1,000 workers. The average cost for the service is $45 per user per month. Smoothstone has about 200 customers and has been in operation since 2000.

### 3Com Launches V6000 IP Hardware

■ 3Com Corp. has rolled out the V6000 Integrated Branch Communications hardware, which is designed to run with its VCX IP Telephony Release 7.0 software. The V6000 serves up to 100 users and is intended for branch offices. Available now, the V6000 is priced at $3,500. A VCX IP software license sells for $1,000.

### Compuware Tool For ASP.Net Debuts

■ Compuware Corp. has released a version of its security analysis tool that includes integration with Microsoft Visual Studio 2005. DevPartner SecurityChecker 2.0 is designed to help development and testing teams locate and fix security problems earlier in the ASP.Net Web application life cycle. The tool uses code scanning, runtime analysis and penetration techniques. It is available now; pricing starts at $12,000 per concurrent user.

### IBM Upgrades Data Protection for Files

■ IBM last week introduced a major upgrade to its Continuous Data Protection for Files software. The new version offers increased subfile backup for Microsoft Outlook and Lotus Notes files and tools to simplify management. IBM said the software senses which portions of e-mail files change and moves only the modified pieces for backup, reducing network bandwidth requirements. IBM Tivoli Continuous Data Protection for Files 2.1.2 is available now and sells for $35 per laptop or desktop and $995 per server processor.

MARK WILLOUGHBY

# Bottleneck on the Internet On-ramp

THE entire online world is going to become one big, happy federated network, a unified cybernation of authorized digerati accessing and buying everything with a single, easy log-in, right?

Not so fast, pilgrim. According to Amdahl's Law, the scalability of all things digital is controlled by the slowest elements, not the speediest. Large consumer federated networks are going to encounter natural resistance from real-world constraints, starting with authentication.

**MARK WILLOUGHBY,** CISSP, is a 20-year IT industry veteran and journalist. He can be reached at **markw@messaginggroup.com.**

Pundits put federated networks in the identity management taxonomy, where they're treated as infrastructure because they include a directory to support a plethora of security systems. Under the identity management umbrella are centralized administration and lifecycle management of user ID data and attributes, log-in synchronization across multiple applications, single sign-on, authentication and policy-based access control.

Authentication and identity management overlap, but authentication is more accurately viewed separately. Predictions have generally pegged both the authentication and the identity management marketplaces for rapid double-digit growth, with identity management pulling ahead and posting more than $10 billion in annual sales by around 2007, according to IDC.

The rubber meets the road for identity management with authentication. Authentication means users, and users always increase uncertainty and cost. Watch deployments of endpoint client software for realistic indicators of scalability as the neat and tidy digital world collides with the messy analog one.

Order prevails in the enterprise identity-management marketplace, on federated networks serving supply and in distribution chains for large multinationals like General Electric, Toyota or Boeing. Such federated networks are built on high levels of trust. Suppliers seeking to do business with the large multinationals readily adopt the required authentication standards as a cost of doing business. The authentication on-ramps to federated networks are reasonably tidy and orderly in this trusted model.

The trust model for large controlled federated networks generally applies to governments, where those seeking access to desired services can be required to adopt certain authentication standards. This may not be the case for the IRS, the passport office or driver's license bureaus serving the general public.

Chaos reigns for the universal consumer federated network, which resembles hordes of holiday shoppers descending on malls daily. Netizens armed with multiple unknown authentication factors present online merchants and service providers with tough decisions regarding privileges.

Imagine if mall merchants only supported a credit card from a single issuing bank and the bottlenecks that would develop as the merchants tried to determine the trustworthiness of credit cards from other, unknown banks.

Today's enterprise federated networks are built on a secure trust model and rely on a deterministic yes-or-no authentication decision. Authentication assertions are quickly passed among the federation members with digital precision. As long as the standards are followed, there are few authentication problems.

Parsing multiple unknown authentication methods for making trust decisions on consumer access and service and sales authorizations is no trivial task. This type of indeterminate decision-making is a nuanced probabilistic exercise not readily supported in current federation models. What if that one-time password token the online customer is flashing is unrecognized?

The ability to enforce deterministic authentication for quick federation assertions bends when the marketplace pushes back with a wider variety of authentication methods and credentials than envisioned in federation architectures. Millions of dollars in potential online business from lesser-known and trusted authentication credentials creates an indeterminate federation on-ramp.

Consumer businesses are mature users of risk management models for making economic decisions in an uncertain environment. The cost of bad debts, fraudulent checks and stolen merchandise is factored into the cost of everything we buy; it's included in the price tag.

Guess which authentication trust model will win in the online consumer market — the high-trust deterministic authentication model, or the Wild West multifactor indeterminate shootout that promises a much larger marketplace?

Authentication is receiving a lot of attention from security vendors and consumer businesses as they become aware of the risks of doing business online. Chief among the risks in the consumer marketplace are the undesirable choices of lost sales or the return of the worldwide wait, which is untenable in a consumer society.

Meanwhile, back at the knowledge ranch, new types of authentication services and products are on the drawing boards to better manage the risk in consumer multifactor authentication. Imagine a future where the daily news includes Internet authentication advisories, along with traffic, weather and sports. Juice your credit cards and start your multifactor authentication engine to beat the traffic jam on the Internet on-ramp.

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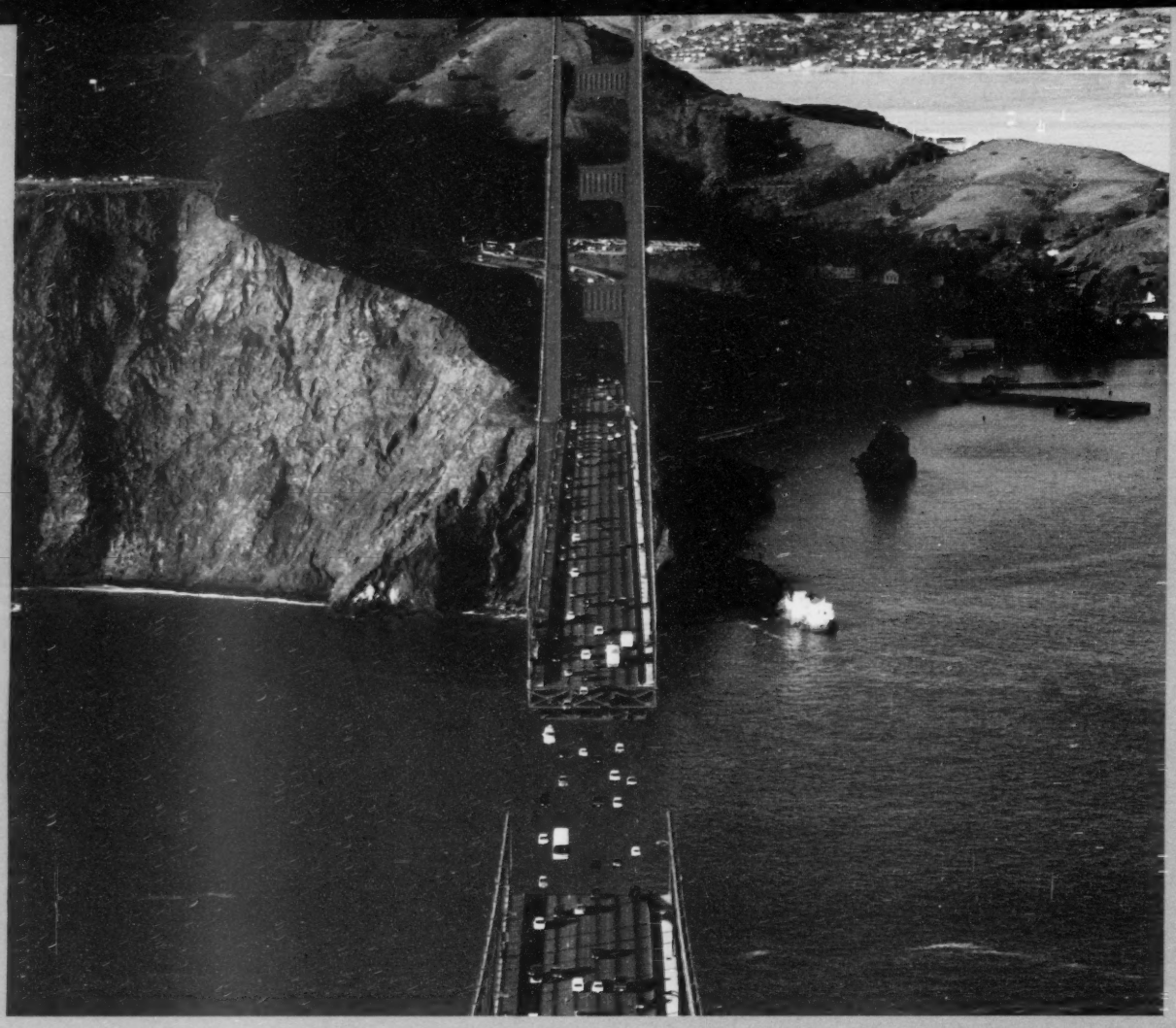

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Q&A

**Managers' Forum**

What can you do about brilliant technicians who refuse to stoop to maintenance work? Paul Glen has some suggestions for a harried IT manager. He also enlightens a recent college grad about what will be expected of him when he starts his first IT job. **PAGE 46**

OPINION

**The Uncertain Future of the Desktop**

Employees are storming the corporate gates with consumer products, says Barbara Gomolski, and smart CIOs may want to reconsider prevailing ideas about maintaining standards at all costs. After all, if you can't beat 'em... **PAGE 48**

Beta testers can shape vendors' products, says MARY-JANE JARVIS-HAIG of Hudson's Bay Co.

ANDRÉ BOURDUAS

# BetterBeta

The more you know about beta testing, the more your company will gain from the experience. BY **GARY SHEA**

**EVEN THOUGH** the more cynical among us may believe that vendors have the most to gain from beta testing, beta programs that are carefully chosen and carried out can benefit IT managers and their companies, too.

"Selective participation in beta programs for strategic products makes good sense," says Mary-Jane Jarvis-Haig, senior manager of business intelligence at Toronto-based retailer Hudson's Bay Co.

The more you know about the ins and outs of beta testing, the better you'll be at choosing the programs that make the most sense for your company. Here's a primer on what it's all about.

## Opportunity for Influence

Hudson's Bay participates in beta programs with the vendors of its point-of-sale application, systems software and enterprise data warehouse. The retailer's enterprise data warehouse vendor is Teradata, which is a division of Dayton, Ohio-based NCR Corp.

Hudson's Bay didn't jump into beta testing. "[We] started using Teradata in 1998, but we've participated in four or five beta programs with NCR only in the last few years," says Jarvis-Haig. The impetus to participate comes from project managers who know the applications best and see the value in shaping new features. "They make the case to senior IT management," she says.

Project managers point to a number of benefits. "We get our requirements addressed and can influence the vendor," Jarvis-Haig explains. "A new feature may need some changes to work as we think it should. As a beta user, we get to say [that]. We also evaluate performance in a test environment before deciding to put code into production. We like to be on the cutting edge. It helps keep the technical staff motivated."

But there's more to beta testing than getting to play with the new toys first. "Early access to critical

new functions shouldn't be the only reason to be a beta tester," says Michael Fine, author of *Beta Testing for Better Software* (Wiley, 2002). "Building the relationship with the vendor, especially for enterprise-level products, is another incentive."

Randy Lea agrees. "Success for the beta participant is to see realized features and growth in the [vendor] partnership," says Lea, vice president of products and services at Teradata.

And there may be a financial benefit as well. "Successful beta participation leads to a lower cost of implementation," says Kathy Lang, CIO at Marquette University in Milwaukee. That's because fast turnaround on issues uncovered, as well as support-team and end-user readiness, contribute to a smoother production installation when the beta is complete. "There may also be the incentive of a lower price," Lang says.

Vendors provide prerelease products to beta users at no charge, and some sweeten the deal. For example, Charleston, S.C.-based Blackbaud Inc., a developer of software for the nonprofit sector, offers its beta users the opportunity to earn "beta bucks," which can be used to offset the cost of other Blackbaud products and services.

Bucky Wall, release manager at Blackbaud, oversees the group that's responsible for product stabilization and release. "Beta is the main thing that occurs during stabilization," says Wall.

In an effort to double the number of beta testers this year, he is targeting user groups. Other vendors canvass at conferences, ask salespeople to recommend candidates and invite customers that have formally submitted requirements. Vendors may even mine technical support logs to identify potential beta participants.

Successful beta testing takes commitment and communication from both sides. "In a real beta, what the customer has to say is important," Fine says. "Every bit of feedback must be recognized by the vendor. If there's no response, beta testers get unmotivated. At the same time, a good beta tester shows sincere interest, participation and engagement."

Beta testing also demands resources from both parties. Blackbaud, for example, requires that beta customers have broadband Internet access. Wall explains that this is needed to allow the vendor to access the customer environment directly to install code, figure out problems and fix them.

"We seek a validation of resource commitment," says Lea. "We ask, 'How well can they commit to plan?' "

## The Process

From a participant's point of view, the beta-testing process has five steps, says Jarvis-Haig: interest, negotiation, qualification, implementation and closure.

■ **INTEREST.** The first step is identifying features or functions in an upcoming product release that may benefit your organization. That means that if your company has decided to regularly participate in betas, you need to be aware of the vendor's product release schedule — to know what's coming and when. Renee Klish, IT supervisor and database administrator at the Detroit Zoological Society, signed on for a beta test when she identified a new analytic function in Blackbaud's Raiser's Edge that would allow her organization to eliminate another product, saving on license fees and simplifying its IT environment.

■ **NEGOTIATION.** This is an internal process. The user organization decides whether the potential benefit in the new release merits the time, energy and resources required for beta participation and then goes to senior IT management for approval. If your upper management is risk-averse, this step may be a challenge, says Jarvis-Haig.

■ **QUALIFICATION.** Next, the user and vendor must agree that the beta test makes sense for both sides. If the user company pushed for a capability that the vendor just added, the vendor may be eager to have the user take part. On the other hand, the user company may be a stretch candidate, and the vendor may have to be convinced that it should participate. "We look for user breadth [of feature use] in the next release," says Teradata's Lea.

Other qualifications may include having prerequisite products in the user environment, assurance that there are no schedule conflicts and a history of good beta participation.

"It's a two-way street," says Jarvis-Haig. "They're not going to qualify us if it isn't in their interest."

Once the user is qualified, there most likely will be a formal agreement. Blackbaud beta participants get a program guide that includes the beta agreement, nondisclosure forms, details on incentives and descriptions of the beta process. Teradata beta participants sign an agreement and develop a plan with NCR.

■ **IMPLEMENTATION.** The duration of most beta programs is one to three months, although the period may be shorter. "Implementation is intense [and] of short duration," says Jarvis-Haig. This is when the real work happens. For a limited period, new software is installed on the user's development systems. Developers work with new or enhanced interfaces, or they may test the performance of benchmark transactions.

Users also perform regression testing to ensure that functions currently in use still work. Tasks here may include setup (to reproduce the production environment), running automated test cases and arranging for expert end users to operate in the beta environment. User feedback often leads to changes in the product.

"We provide input to the vendor," says Jarvis-Haig. "We can influence the end result."

This ability to affect the final product is a key benefit for beta testers, says Hannah Roberts, communications coordinator at Opera North, an opera company in Leeds, England. For example, she says, "we had a say in shaping [a product's] database to better suit our needs."

Klish says that Blackbaud has added prompts, changed flows and simplified interfaces because of feedback from the Detroit Zoological Society.

Good communication between the vendor and beta testers during this time is essential. To facilitate that, each Teradata beta account has a site manager who is an experienced product engineer with links into the development organization. At Blackbaud, a "beta buddy" talks with each beta user weekly and as needed. Both vendors use the Web extensively for communication.

■ **CLOSURE.** This is the last step, and it typically includes a beta-test report written by the lead beta tester or project manager. "The beta report will discuss issues resolved, learnings — did the product work like we thought it would?" Jarvis-Haig says. It also may include sections on expectations, the timeline, activities, problems found and recommendations. There may be a closure meeting for the vendor and testers, and some vendors ask beta participants to complete a final survey.

Despite the potential benefits, CIOs say you should be discriminating in your choice of beta programs to make the most of your time and resources.

"Beta participation is not a standard activity," says Lang. "When a critical product has new features that are important to the school, we will be a beta." During her three and a half years at Marquette, the IT department has taken part in only two beta-testing programs, she says.

Beta testing can be an important tool for IT. By carefully choosing where to participate, being aware of and leveraging multiple benefits, and enabling full engagement, IT managers can motivate employees, increase user satisfaction and use computing resources more productively. ◗

*Shea is a freelance writer in Bayside, Wis. Contact him at garytshea@att.net.*

### What's In It for You?

**WHAT USERS WANT:**
- Requirements addressed
- New functions to try
- Partnerships
- Staff motivation
- Incentives

**WHAT VENDORS WANT:**
- Validation
- Product readiness
- Customer perspective
- Partnerships
- References

## Beta Without Bother

**OCCASIONALLY, beta testing requires minimal involvement by the user company.**

**As marketing manager for Teradata products and services, Randy Lea influences the product management group, which has ultimate responsibility for beta programs. To help ensure that a tight production schedule is met, product management sometimes hires NCR's own professional services arm to perform beta testing at a customer's location. NCR consultants install beta code and manage testing in the customer's environment.**

**Lea says this relatively new approach serves several purposes. It brings NCR's professional services staffers up to speed on the latest release, it enables them to observe the customer experience directly, and it strengthens the user/vendor partnership through the vendor's physical presence at the user site.**

**– GARY SHEA**

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# MANAGERS' FORUM

WITH PAUL GLEN

I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back."

PLEASE SEND YOUR QUESTIONS, COMMENTS AND CRITIQUES TO ME AT PGLEN@C2-CONSULTING.COM

**I'm worried about my transition from school to work and wonder if you have any general suggestions for a successful move into a new position. Two things that come to mind are office politics and competency. I hope that sufficient training or direction will be provided, since I haven't had a lot of IT exposure in the "real world," and that I will be able to cope with the office politics well.**

Welcome to our world. It's great that you're already thinking about these things, but there's probably nothing to worry about.

You've already figured out the most important thing about joining the work world: School doesn't really prepare you for it. I'm not suggesting that school is unimportant, but that it really provides only a narrow set of benefits. A good college education should teach you two basic things: how to think clearly and critically, and how to learn.

Any reasonable employer hiring someone directly out of school should be looking primarily at these two things and not at whether you know assembler, Oracle, C++ or .Net. Regardless of the specific technical skills you learned, they will be obsolete before you know it.

To successfully enter the workforce, you really need only one more thing, and based on your question, I suspect that you've got it. You need a burning desire to be more than you are today. Without the drive to grow, your education means nothing. If you've got these three things — clear thinking, active learning and the desire to grow — you're probably in great shape.

That said, let's take a look at your specific concerns. First, competence. As I've already suggested, don't worry too much about this. Whatever you are going to be hired to do, you've probably never done it before. Your managers will expect you to learn on the job or send you to a class. Entry-level positions pay less than those that require more experience, not because you are young, but because managers expect you to develop your competence and not to arrive with it fully formed.

And finally, office politics. My advice here is to not worry about it. Your first concern should be to focus on developing your competence and delivering value. Keep your head down and do your work. Let your boss protect you from and worry about the politics. At this stage of your career, it shouldn't be an important thing for you to deal with.

In case you have trepidation about this, it's also important to know that in technical organizations, office politicians tend to be rather ham-fisted. As geeks, we're generally not the most adept politicians on the corporate landscape. So don't worry, and enjoy your new life.

**I've got some brilliant technical guys who like developing new things but don't want to do any maintenance work. How can I handle this?**

I think that you've discovered a flaw in the typical hiring and management approach for technical people. When I read an ad for a technical position, it typically gives a laundry list of languages, packages and industry experience required. It assumes that if someone possesses all those technical skills, he should be a great fit.

Unfortunately, it just ain't so. People don't just have skills; they also have personalities. They have wishes, desires, aspirations and orientations.

I would describe one of the key orientations found among technical people as "attitude toward innovation," and the degree to which individual IT workers display this attitude falls somewhere on a linear scale. At one end of the scale is "invention," and at the other is "perfection." People with a work orientation somewhere toward the invention end of the scale are interested primarily in making new things, creating from nothing. They view their work as a Promethean exercise. These are the types of people who like to design and build Version 1.0 of some new system. They consider this type of work real work and are bored by the incremental nature of working on Versions 1.1, 1.1a, 1.2, etc.

People who fall toward the "perfection" end of the spectrum are much more comfortable with, and excited by, taking something that exists and refining it until it screams of competence. They are not interested in making massive conceptual leaps but are happy taking something that is good and making it great.

This innovation/perfection orientation is completely unrelated to technical skills. You can find people with a wide variety of orientations with exactly the same skills.

But to develop and maintain outstanding technology, you need a mix of people with these orientations. Neither inventors nor perfectors alone will get you where you need to go.

It sounds like you've hired a disproportionate number of inventors and are asking them to do "perfection" work. In this case, you may need to re-evaluate your mix of people. At least you may need to mix up the work. Most inventors can do perfection work, as long as they see it as limited in scope and duration. They need to see the probability of new invention on the horizon to hammer through things that they'd rather not do.

## READERS TALK BACK

### More on IT Curmudgeons

Although I agree with your response [Nov. 28], I have an additional suggestion. Applying the principles outlined in *Six Thinking Hats* by Edward de Bono (Back Bay Books, 1999) is a nonconfrontational method of quickly regaining control over the direction of brainstorming sessions and meetings. When there are negative disruptions, participants can be reminded that they are wearing "black hats," when brainstorming requires "green-hat" thinking. An additional benefit is that most people begin to realize they are predominately one "hat" or another and can work toward shifting their overall outlook and approach to things.

**– PDR**

Regarding the two lifers you call curmudgeons: Did you ever for a femtosecond even think that they could be right and that the manager could be totally wrong? How about giving them the challenge to come up with options that may work?

**– DR**

Sure, I think it's highly likely that two long-term, experienced employees can be right about what won't work. But when two people feed off each other and complain that everything is impossible, I think it's unlikely that they are right about that. They are just being negative.

Managers should always presume that long-term employees have lots of valuable input and ask them to use their skills to help make the business better. But when their input is exclusively negative, their value is limited.

Is it possible that a manager can be wrong on individual issues? Sure. Managers have the same ability to be mistaken, silly, vain, confused and fearful as everyone else. But even the worst manager is unlikely to be wrong about everything, just as the most curmudgeonly employee is unlikely to be right about everything.

**– Paul Glen**

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## EXEC TRACK

### Leffring Appointed CIO at DeVry

DeVry Inc., a holding company for several institutions of higher education, has appointed HARVEY A. LEFFRING CIO. Previously, Leffring was CIO at Siegel-Robert Automotive, A.B.Dick Co. and Archibald Candy Corp.

### Funck Will Lead IT At Broadspire

PATRICK FUNCK has been named senior vice president and CIO at Broadspire Services Inc., which provides insurance claims management. Funck joins Broadspire from CNA Insurance, where he was IT vice president for underwriting and claim initiatives. Previously, he was vice president of IT claims systems at Zurich Financial Services.

### Shrader Named CIO at DynCorp

DynCorp International Inc., a project management company, has appointed GREGORY V. SHRADER senior vice president and CIO. Shrader joined DynCorp in 1985 as one of the first three members of the IT department. Most recently, he was vice president of IT and deputy CIO.

### Hines Will Lead IT At PeopleSupport

PeopleSupport Inc., a Los Angeles-based provider of back-office services from facilities in the Philippines, has named GEORGE HINES CIO. He will report to PeopleSupport Chairman and CEO Lance Rosenzweig. Prior to joining PeopleSupport, Hines was ChaseCom LP's executive vice president of operations and chief technology officer.

### Todd Made CMGI CIO

JOSITA TODD has been hired as CIO at CMGI Inc., a provider of marketing and distribution software. Todd will report to CEO Joseph C. Lawler. Previously, she was vice president of IT at Thermo Electron Corp. and Abbott Laboratories' pharmaceutical products division.

BARBARA GOMOLSKI

# The Uncertain Future Of the Desktop

IF YOU'RE LIKE ME, you've spent a good part of your time off this winter with technology. No, I'm not talking about taking work home on your holiday break. I'm talking about activities such as the following:

- Loading music onto your new iPod Nano.
- Emancipating your relatives' PCs from viruses.
- Trying to moderate your kids' use of computer games without being a grinch.

**BARBARA GOMOLSKI,** a former *Computerworld* reporter, is a vice president at Gartner Inc., where she focuses on IT financial management. Contact her at **barbgomolski@yahoo.com.**

It's amazing how pervasive personal technology has become. And while some of these consumer technologies may seem worlds apart from the corporate computing environment, they're not. There are at least a few potentially disruptive trends that are likely to emerge as a result of the widespread use of personal technology. Each of these trends will have a significant effect on the IT organization and IT management. Here are some trends to consider:

**The IT organization's loss of control of the desktop.** I can foresee a time when IT simply gives up trying to control the desktop — and that time may not be too far off. We are already seeing some organizations allotting money to employees and allowing them to buy their own desktop technology. Does this sound crazy? Maybe not. In a world where e-mail and applications are accessible through phones, handheld devices and laptops, why should we require employees to use the "standard-issue" PC?

With security and software distribution managed at the network/server level, the desktop device becomes less relevant. Of course, this brave new world does have serious implications from a support standpoint. Lower support and maintenance costs are among the main drivers of standardization. There are also implications for asset management and tracking. It's hard enough to manage and track desktop assets when the IT department is procuring and managing all the hardware.

My advice: Plan for a long-term future where neither standardization nor central procurement of desktop IT assets is a given.

**Consumer-driven technology adoption.** It used to be that corporations dictated and drove technology adoption, and that those technologies eventually found their way into the mainstream. For example, I got my first e-mail account around 1991 through my employer. Like most people, I had e-mail at work before I had it at home.

That's not the way it works today. Consumers are ahead of businesses in adopting technologies. As a result, you can expect future employees to bring their own technologies to work, along with an expectation that they may use those technologies on the job. We've already seen this phenomenon with instant messaging and Skype (for voice over IP), and even Excel add-ins.

Traditionally, IT has shunned this notion, the prevailing wisdom being (once again) that such actions fly in the face of standardization, security and other good things that IT tends to value. Going forward, people will view employers that try to lock down and lock out consumer-driven technologies as undesirable and stodgy.

As the lines between business and personal technologies continue to blur, employees will expect to smoothly integrate these aspects of their lives. That means that employers of choice will allow, enable and even encourage such a blending. At a recent gathering of CIOs, one woman remarked that most of us learned about technology on the job. Not so for the generation of workers now entering the workforce.

**The continued spread of telework and globalization.** One of the main byproducts of the "consumerization" of technology is a truly global workforce and a truly global consumer base. When you combine technology personalization with the trend toward telework and globalization, you can envision a workforce that chooses how and where it works and a customer base that is equally diverse.

And don't assume that this workforce or customer base will reflect the traditional domestic demographic. Increasingly, the people who work for us and buy our products and services will be an amalgam of individuals from around the world. So the expectation that employees will be working in the same locations as their co-workers — or even on the same continent — is becoming less feasible. Similarly, the idea that customers will be geographically centralized is already obsolete.

Some CIOs and executives will undoubtedly balk at some of these ideas, insisting that personal technology will never penetrate the corporate walls. I heartily disagree.

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### TELEPHONE/FAX

Main phone number (508) 879-0700
All editors unless otherwise noted below
Main fax number (508) 875-8931
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### E-MAIL

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- Staff members' e-mail follows this form: firstname_lastname@computerworld.com.
- For IDG News Service correspondents: firstname_lastname@idg.com.

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## ChoicePoint

breaches," said Christopher Pierson, an attorney at Lewis and Roca LLP in Phoenix. "It appears that the FTC is not going to wait for federal [data security] legislation to come down the pipe and is instead going to take action using existing laws."

The penalties imposed on ChoicePoint are "a seminal reaction regarding information security" on the part of the FTC, said Christopher Ford, an attorney at Alston & Bird LLP in Washington.

Future victims of identity theft will be able to point to last week's settlement and say to a company whose data was breached, "Look, you owe me something," Ford said.

The FTC charged that ChoicePoint failed to comply with its data protection obligations under the Fair Credit Reporting Act and made false and misleading statements about its data privacy policies.

In addition to paying the $10 million civil penalty, the Alpharetta, Ga.-based company will set up a $5 million trust fund that will be administered by the FTC for consumers who may have been victimized as a result of the security breach. The financial records of about 162,000 people were potentially compromised.

ChoicePoint also has to establish and maintain a comprehensive information-security program and submit to third-party audits of its data security procedures every two years for the next 20 years, according to the FTC.

### Guarding Both Doors

The regulatory action against ChoicePoint puts companies on notice that they "must guard the front door as well as guard the back door against hackers," FTC Chairman Deborah Platt Majoras said during a press conference in Washington.

ChoicePoint didn't admit to any of the FTC's allegations about the company's lack of compliance with security regulations. But in a statement, ChoicePoint CEO Derek Smith said the security breach "provided critical lessons from which ChoicePoint, and indeed the entire industry, has learned a great deal."

Smith added that over the past few months, the company has implemented "nearly all of the changes" required by the FTC. That includes a series of information security measures outlined on the company's Web site last week (see chart).

ChoicePoint disclosed the breach last February, saying that it had allowed a group of criminals posing as legitimate customers to gain access to personal information about consumers. The incident at ChoicePoint was the first in a series of high-profile breaches that has put information security squarely in the public eye.

Except for the financial penalties, the FTC's settlement with ChoicePoint is similar to deals it reached with Columbus, Ohio-based shoe retailer DSW Inc. in December and Natick, Mass.-based BJ's Wholesale Club Inc. last June.

Both of those companies also agreed to beef up their IT security programs and undergo biannual security audits in the wake of data breaches.

The settlements make it clear that the FTC is willing to escalate security-related enforcement actions, said Michael Overly, an attorney at Foley & Lardner LLP in Los Angeles. "We knew something big was going to happen" after the DSW and BJ's settlements, Overly said. "The agreement with ChoicePoint shows that [FTC officials] have every intent of continuing with even more force this year."

### Security Push

**ChoicePoint said it has taken the following technology-related steps to improve security:**

- **Ensured the systemic implementation of technical, patch management and antivirus standards across its network.**
- **Began using external Web server scans and application scanning services to reduce security risks.**
- **Installed various technologies for secure messaging and encryption of databases and external data feeds.**
- **Achieved compliance with the Payment Card Industry standard for securing credit card data.**

## EMC Upgrades Capacity of DMX-3 Array to a Petabyte

### Also unveils NAS global namespace virtualization

**BY LUCAS MEARIAN**

EMC Corp. last week brought out an upgrade to its high-end Symmetrix DMX-3 disk array that creates its largest storage subsystem to date.

The DMX-3 can now scale from 96 to 2,400 drives in a single frame for up to 1 petabyte of capacity, said Dave Donatelli, executive vice president of storage platform operations at Hopkinton, Mass.-based EMC.

Rich Niemiec, CEO of The Ultimate Software Consultants, a systems integrator in Lombard, Ill., said the capacity of the upgraded array indicates that databases of a similar size could soon follow.

Niemiec noted that when storage vendors started producing terabyte-capacity arrays, "companies started building terabyte databases. Now that we're seeing petabyte [arrays], you know that petabyte databases are just around the corner."

### Three Drives

The upgraded DMX-3 also sports three different types of Fibre Channel drives that allow users to move storage across tiers of disks inside the array: a new 500GB drive that runs at 7,200 rpm, a 300GB midrange drive that runs at 10,000 rpm and a 146GB high-end drive that runs at 15,000 rpm.

List pricing for the DMX-3 starts at $250,000 for a new entry-level configuration with 96 drives and a 7TB capacity. The added configurations, which EMC said were in the works when it introduced the DMX-3 last July, are scheduled to ship in March.

EMC also released a new version of its Celerra network-attached storage (NAS) device that offers tight integration with the Rainfinity Global File Virtualization software that it purchased last August.

The Rainfinity software will allow the consolidation of NAS systems by using a single global namespace, EMC said.

The software virtualizes Windows, Unix and Linux file systems across heterogeneous NAS systems and file servers, making the boxes appear to be a single unit to a host server.

Tony Asaro, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., said EMC joins a small cadre of vendors offering global namespace technology as a feature on NAS systems.

## Car Trouble Results in Breaches

**EVEN AS THE FTC** was fining ChoicePoint, two more companies reported large data-security breaches last week – both involving the apparent theft of IT equipment from employees' cars.

Providence Home Services, a division of Providence Health System in Seattle, said it's notifying 365,000 hospice and home health care patients in Oregon and Washington about the theft late last month of backup disks and tapes that included personal information and confidential medical records.

A Providence employee told company officials on Dec. 31 that the disks and tapes had been stolen from his car while it was parked at his home. The employee took the devices home as part of a backup protocol that sent disks and tapes off-site to protect them against possible loss from fires or other disasters, a Providence spokesman said. That practice has since been stopped, he added.

The spokesman said some of the information on the tapes was password-protected at the application level, while the rest was stored in proprietary file formats. The data on the disks also wasn't encrypted but was stored in a proprietary file format "in a way that would make it difficult, if not impossible, for someone to access it [and] then make any sense out of it," he said.

Rick Cagen, CEO of Providence's Portland service area, said the home health care unit is implementing new data-backup procedures using more-traditional means, including secure sites in remote locations. "We do have alternate practices now," Cagen said.

In the other incident that came to light last week, Ameriprise Financial Inc. in Minneapolis said it's notifying 158,000 customers and 68,000 financial advisers that a laptop PC containing personal information about them was stolen late last month.

The laptop was taken from an employee's locked car in a public parking lot, Ameriprise said. The financial services firm didn't identify the city where the incident took place, saying that police are still investigating the theft.

Windows and Novell Inc.'s networking applications were password-protected on the laptop, but the data files weren't encrypted as required under company policies, according to an Ameriprise spokesman. He said the employee involved in the incident was fired because of the lack of encryption.

The spokesman added, though, that even having a customer's name and account number wouldn't let an identity thief access an account. At least three other pieces of personal information are needed to do so, he said.

– TODD R. WEISS

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*Continued from page 1*

## BlackBerry

BlackBerry 7750 devices.

Gillman said his IT staffers are working to "make sure users know that there are already multiple ways to use remote e-mail" through laptops or any Internet-capable devices that can access the firm's secure Web mail system. "But I have to say, BlackBerry makes it so much easier," he added.

Gillman would even be willing to incur added monthly costs if RIM agreed to settle the dispute and pay licensing fees to NTP. "We'd pay more, within reason," he said. "If we had to pay $5 more a month per device, on top of the current $50 per month, nobody would scream. And I bet if the monthly fee went up another $30, some users might pay it."

HALAMKA says BlackBerry service is critical to his personal productivity.

Mark Guibert, vice president of corporate marketing at RIM, said in a statement that the Waterloo, Ontario-based company "continues to be open to a reasonable resolution" with Arlington, Va.-based NTP. He also said RIM has developed a software work-around that it could implement to avoid any patent-infringement problems if sales of existing BlackBerry devices were barred.

But, like Gillman, other IT managers bemoaned the possible loss of RIM's service, saying that they consider rival products to be far behind the BlackBerry in usability.

John Halamka, CIO at Harvard Medical School and several other New England health care organizations, oversees 500 BlackBerry users and relies heavily on RIM's service himself. Halamka said he is so concerned about the possibility of service disruptions that he filed a declaration on Jan. 11 with the U.S. District Court in Virginia describing how valuable BlackBerry devices were as a backup communications system during a 2002 computer outage at Boston's Beth Israel Deaconess Medical Center.

"BlackBerry service is essential to the clinical operations of Harvard's hospitals," said Halamka, who is a *Computerworld* columnist. "My server monitoring strategy, my disaster recovery strategy and my personal productivity in my five jobs depend upon the BlackBerry network."

For the past two weeks, Halamka, who receives 600 e-mails daily, has been testing a Palm Inc. Treo 700 device over a Verizon Wireless broadband connection. He said that although the Treo is "perfect" for a low-volume e-mail user, it's not as handy as the BlackBerry for someone who gets as many messages as he does.

Rick Proctor, vice president of IT at Thomas Nelson Inc., a Christian book publisher in Nashville with about 45 BlackBerry users, said RIM's technology has been "a better device for our needs" than other handhelds that the company has tried. Proctor said his staff is talking to Verizon Wireless about a contingency plan.

### Room for Optimism

Some IT managers don't think the situation will ever reach the stage where all the contingency plans actually need to be put into effect.

"I expect a white knight to ride in and pull this out of the courts and figure out a way for everyone involved to make money," said Al Porco, CIO at the Central Brooklyn Family Health Network in New York.

Gillman noted that RIM is "out of their minds if they don't settle this dispute. They have so much to lose if somebody shuts things down."

Kevin DiLallo, an attorney at Levine, Blaszak, Block and Boothby LLP in Washington who represents companies in negotiations on wireless service deals, said many of his clients are asking him how to react to the patent dispute.

"If push comes to shove, RIM is going to settle the case — but at the last minute," DiLallo said. He added that the company is "playing a dangerous game of chicken, since the [federal district] court has on more than one occasion expressed impatience with RIM's litigation tactics."

On Dec. 5, Gartner Inc. advised its clients to hold off on mission-critical BlackBerry purchases. Because neither a settlement nor an injunction has been put in place since then, it now is urging companies that are uncomfortable taking risks to also assess other technologies.

But, Gartner analyst Ken Dulaney said, "in the end, I think that many companies are just going to wait it out because there are so many uncertainties no matter which path you follow."

## Corporate Users Cry Foul Over Planned Exemptions to BlackBerry Blackout

**NTP'S EXEMPTION** of government workers and emergency personnel from its requested shutdown of the BlackBerry service left some corporate users steaming last week.

Several IT managers said they doubt that a court-ordered shutdown of Research In Motion's wireless service will ever take effect. But they added that they're miffed by NTP's exemption proposal.

"They're sticking it to private business," said John Wade, CIO at Saint Luke's Health System Inc. in Kansas City, Mo. The IT department at Saint Luke's supports nearly 500 health care workers who use BlackBerry devices, Wade said.

"I understand the government's desire for an exemption for mission-critical services, but I imagine that many private-sector companies could make the same argument," said Rick Proctor, vice president of IT at Thomas Nelson Inc.

NTP adjusted the proposed injunction in a Jan. 17 memorandum to U.S. District Court Judge James Spencer, saying it wasn't seeking to stop BlackBerry use by federal, state and local government employees or certified first responders.

Attorney James Wallace Jr. said last week that NTP is complying with a federal law that exempts U.S. government workers from such injunctions. As for the other groups that would be exempted, Wallace said, "We're not nasty, vindictive people, and we're trying to help emergency responders. But purely commercial [customers] are going to have to stop using BlackBerry unless RIM pays up."

Gartner analyst Todd Kort estimated that up to 25% of the nearly 4 million BlackBerry users in the U.S. could qualify for an exemption.

RIM argued in its own Jan. 17 filing that an exemption would be hard to implement, but NTP disagrees. Network operators could shut off service to all BlackBerry users except those who had contacted them and shown that they were eligible for the exemption, Wallace said.

– MATT HAMBLEN

## Judge Schedules Feb. 24 Hearing on Injunction Request

**THE FEDERAL JUDGE** overseeing the patent infringement case between Research In Motion and NTP has scheduled a Feb. 24 hearing to consider a possible injunction against further sales of BlackBerry devices and continued operation of RIM's wireless service.

James Wallace Jr., an attorney who represents NTP, said the requested injunction would also give current BlackBerry users 30 days to find new wireless devices and services.

Mark Guibert, RIM's vice president of corporate marketing, said in a statement that if an injunction were to be imposed, RIM would install a software work-around on new BlackBerry devices. "Work-arounds are a legitimate strategy respected by the courts, so RIM would be fully entitled to alter its software and continue shipping," Guibert said.

He also argued that the nearly 4 million existing BlackBerry users should be allowed to continue using the service even if an injunction is put in place. If the judge disagrees, Guibert said, RIM will seek a longer grace period than the 30-day one proposed by NTP.

Frank Gillman, director of technology at Allen Matkins Leck Gamble & Mallory, said he would go along with a work-around that enabled RIM to avoid any patent infringement, because it would be easier to install new software for his BlackBerry devices than it would be to find and deploy an alternative technology.

RIM is also pinning its hopes on a re-examination of NTP's patents by the U.S. Patent and Trademark Office. The patent office has issued preliminary decisions against the validity of NTP's patent claims, with the most recent ruling coming on Nov. 30. However, U.S. District Court Judge James Spencer said on the same day that he wouldn't hold up the case between RIM and NTP while the patents are being re-examined.

Gartner analyst Todd Kort said the patent dispute has been prolonged partly because RIM executives "honestly believe they did not copy anything from NTP." Kort added that the BlackBerry's QWERTY keyboard gives it a big advantage over rival handhelds. For example, the Palm Treo 700w has a keyboard that is "too cramped for most users to comfortably crank out lengthy e-mails," he said.

– MATT HAMBLEN

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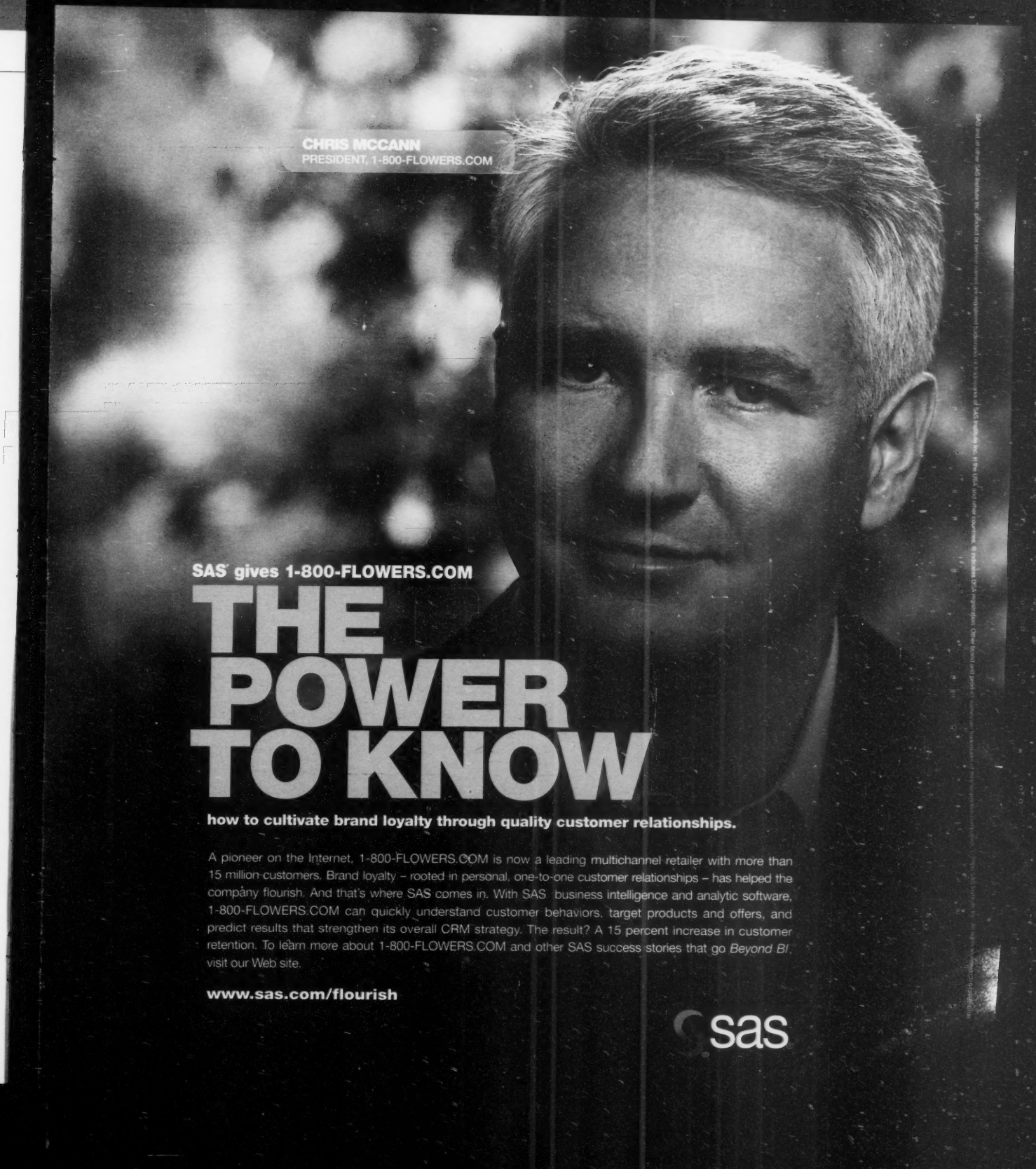


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FRANK HAYES ■ FRANKLY SPEAKING

# CrackBerry No More?

SOMETIME in the next few days, the heads of BlackBerry users will explode. Like zombies, they'll roam blindly, thumbs still twitching as their headless bodies wander the streets searching in vain for messages that never come — all this because Research In Motion's addictive wireless e-mail service has been turned off due to a patent dispute.

Sound unlikely? You obviously haven't read recent BlackBerry news coverage. Every story talks up how a BlackBerry shutdown is imminent, how users can't live without them and how their world is about to come to a nightmarish end.

It makes a great story. But it's not going to happen.

Not this week. Not in the next month. Not until late March at the earliest. And probably not ever.

There *are* going to be some unpleasant bumps coming soon for BlackBerry users. You need to be ready for them if you issue BlackBerries to your users — or if some of your users have become "CrackBerry" addicts on their own. But there's no crisis, no imminent shutdown, no impending doom.

Emergencies make great headlines. But this time, there's no emergency.

Here's what *will* happen: On Feb. 1, the much-ballyhooed court deadline, RIM and patent-holding company NTP Inc. will file legal paperwork. On Feb. 24, they'll argue before a judge over whether RIM must stop selling and providing services for BlackBerry users in the U.S., which the court already found infringes several patents owned by NTP.

The judge *is* likely to rule in NTP's favor. When? Maybe on Feb. 24, maybe later. After that, no sooner than 30 days after the ruling, RIM will have to stop using NTP's technology. That puts the earliest possible BlackBerry drop-dead date at March 26 — just about eight weeks from now.

RIM is asking the court for more time. RIM also says it can sidestep NTP's patents with a software patch that users will have to apply before the drop-dead date. NTP may object that the patch still infringes its patents, but that will take another round of court hearings to decide. That pushes any total BlackBerry shutdown even further out.

Eventually, NTP's patents may be officially voided. But that won't happen until October, if at all, and NTP's appeals could run on for years. Much sooner than that, NTP and RIM will probably hash out a settlement, as they almost managed to do last year.

But for now, you've got at least eight weeks. That's no emergency. But it *is* an opportunity.

What should you do? Start by talking with your users, whether you give them BlackBerries or not. Find out who has them. Then explain the situation and set expectations: There won't be a sudden, unexpected shutdown; there probably *will* be a patch, and after that, their BlackBerries may not work exactly the same; you'll stay on top of the situation and help users as much as you can.

Next, prepare to follow up on that talk. Free up resources to help users apply the patches sometime during March. Find out which providers you'll have to get patches from. Build a patching plan. And make sure you have more than one person tracking BlackBerry news, so you'll know when that plan has to kick in.

Create a contingency plan in case BlackBerry service *is* suddenly cut off. That's more likely to happen because of a tornado or a technical glitch than because of a court order, but you want to be ready anyway.

Finally, start looking at BlackBerry alternatives — just in case. Or rather, get users looking for those alternatives. That'll save you research time, give you useful feedback and start softening users up to the possibility that they may have to change devices, much as they hate that idea.

Their heads won't explode. They'll be happy to help, and glad to hear that the doomsday news is overblown. And, just maybe, they'll remember how useful IT can be the next time it looks like their world is about to end.

**FRANK HAYES,** *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

## Not the Answer He Expected

It's the mid-1980s, and this company's engineering department has its own computer: a 20-year-old General Electric model with all of 16KB of donut core memory. "The maintenance agreement was up for its five-year renewal, and our manager was astounded by the figures he saw," says a pilot fish who was there. "He told the salesman, 'You're quoting $150,000 a year, plus parts. For that kind of money, I can buy a new PDP-11!' The salesman replied, 'I wish you would.' The new computer was up and running two months later."

SHARK TANK

### It Happens Every Spring

This company spends extra on redundant routers, redundant switches and redundant connections from separate providers. "Imagine our surprise when, early the first spring after installing all this, our connection goes down," groans a pilot fish on the scene. "Turns out that over certain stretches, one provider was leasing fiber from the other, and it ran under a farmer's field. Come spring, the farmer came out with his backhoe, and – well, you know. Now every spring, we have at least a half-day of outage. They never tell us if it's the same farmer every time."

### Some Help

Help desk pilot fish gets a call from an employee who says the number listed in the phone book for his government department is a porno hotline. "I immediately called the number," says fish, "and was greeted by a voice that said, 'Hi, stud!' I called the telephone company and they said they knew about the problem and it would be corrected in next year's directory." And when the new book arrives? "The porno number was gone," sighs fish. "It was replaced by the help desk number."

### Well, Sort Of

IT pilot fish brings in his own wireless mouse to use at work, which makes his life easier. But as he's fixing a problem for a user one day, using keyboard shortcuts and not touching the mouse, user comments, "Your mouse is broken." Why do you say that? asks fish. User: "The tail is missing."

### Workingfinenow

Support pilot fish takes a personal call from an elderly friend who can't get her e-mail working correctly. A few step-by-step instructions later, fish receives a test message, but he tells elderly user that he sees the problem: All the words in the test message are running together, making it almost impossible to read. User: "Oh, my sister said to leave all the spaces out."

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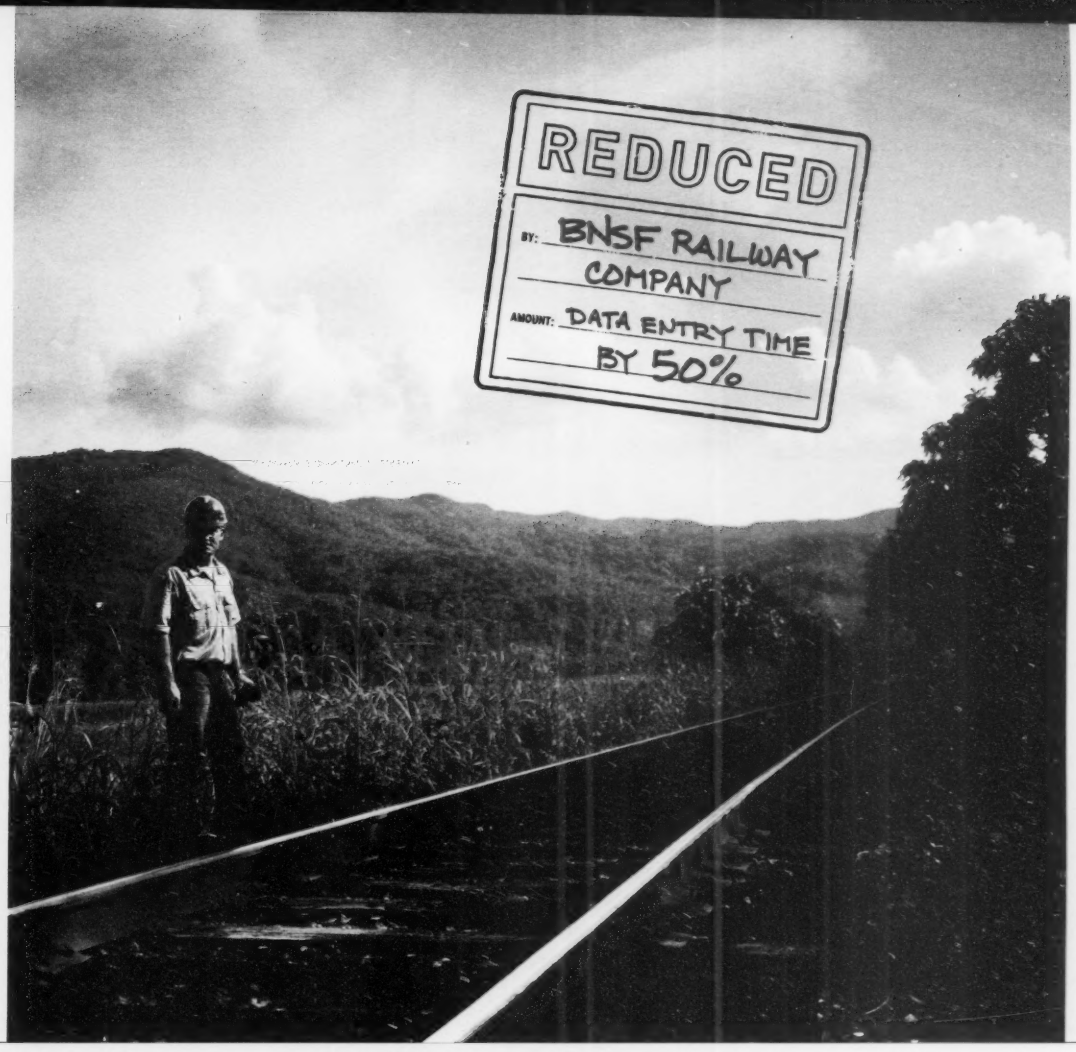


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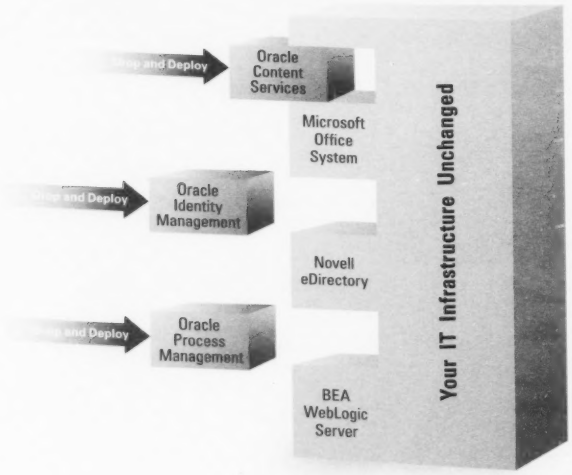


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